Flowering Plants of Great Britain

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THE

FLOWERING PLANTS,

GRASSES, SEDGES, AND FERNS

OF

GREAT BRITAIN,

AND THEIR ALLIES

THE CLUB MOSSES, PEPPERWORTS, AND HORSETAILS.

By ANNE PRATT,

AUTHOR OF "OUR NATIVE SONGSTERS," "WILD FLOWERS," ETC.

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LIST OF PLANTS IN VOL. I.

		Plate	Fig.	Page
Aconitum Napellus	Common Monkshood	8	3	44
Actæa spicata	Baneberry	8	4	46
Adonis autumnalis	Pheasant's Eye	3	5	23
Agrostemma Githago	Corn Cockle	37	2	235
Althæa officinalis	Marsh Mallow	47	2	284
hirsuta	Hispid Marsh Mallow	47	3	287
Anemone nemorosa	Wood Anemone	3	1	20
Pulsatilla	Pasque-flower	3	2	21
Apennina	Blue Mountain Anemone	3	3	23
ranunculoides	Yellow Wood Anemone	3	4	23
Aquilegia vulgaris	Common Columbine	8	1	41
Arabis thaliana	Rock-cress	22	1	116
hirsuta	Hairy Rock-cress	22	2	116
petræa	Alpine Rock-cress	22	3	116
ciliata	Fringed Rock-cress	22	5	117
stricta	Bristol Rock-cress	22	4	117
Turrita	Tower Rock-cress	22	6	117
Arenaria trinervis	Three-nerved Sandwort	43	8	251
serpyllifolia	Thyme-leaved Sandwort	43	7	251
verna	Vernal Sandwort	43	2	252
rubella	Alpine Sandwort	43	3	252
uliginosa	Bog Sandwort			253
tenuifolia	Fine-leaved Sandwort	43	4	253
fastigiata	Level-topped Sandwort	43	5	253
Norvegica	Norwegian Sandwort			254
ciliata	Fringed Sandwort	43	6	254
rubra	Purple Sandwort	43	9	254
marina	Sea-side Sandwort Spurrey	43	10	255
Barbarea vulgaris	Bitter Winter-cress	23	2	118
præcox	Early Winter-cress	23	3	119
Berberis vulgaris	Barberry	10	1	51

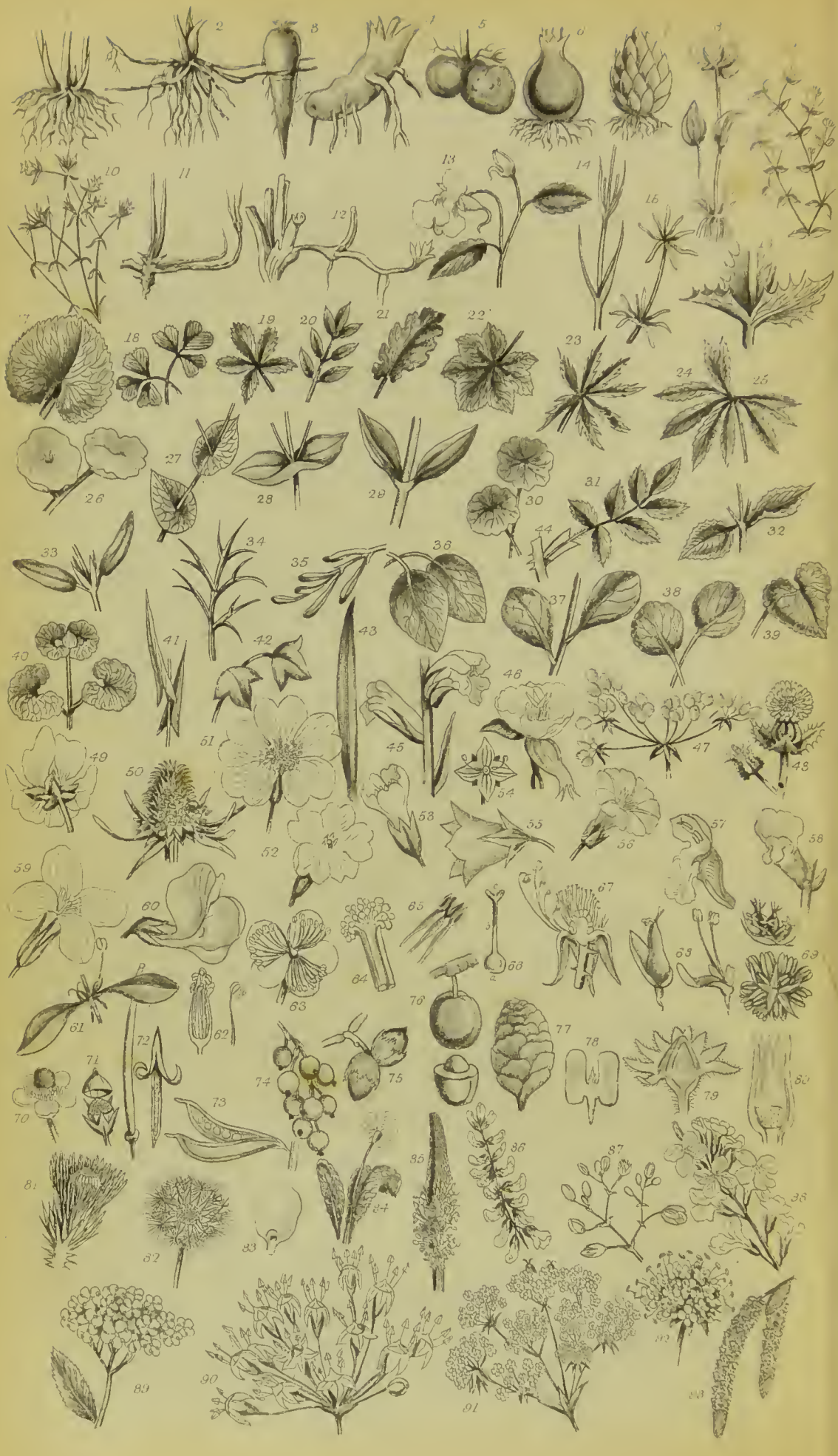
		Plate	Fig.	Page
Brassica campestris	Common Wild Navew	28	1	139
oleracea	Sea Cabbage	28	2	140
Monensis	Isle of Man Cabbage	28	3	144
Napus	Rape Seed	28	4	144
Rapa	Common Turnip	28	5	144
Buffonia annua	Annual Buffonia	45	7	262
Cardamine amara	Large-flowered Bitter-cress	21	2	112
pratensis	Common Bitter-cress, or Cuckoo-flower	21	3	112
impatiens	Narrow-leaved Bitter-cress	21	4	114
hirsuta	Hairy Bitter-cress	21	5	115
Cakile maritima	Purple Sea-Rocket	20	1	105
Caltha palustris	Marsh Marigold	7	2	38
Camelina sativa	Gold of Pleasure	19	1	102
Capsella Bursa pastoris	Shepherd's Purse	15	4	89
Cerastium viscosum	Viscid Mouse-ear Chickweed	44	3	257
vulgatum	Broad-leaved Mouse-ear Chickweed	44	2	258
semidecandrum	Little Mouse-ear Chickweed	44	4	258
tetrandrum	Four-cleft Mouse-ear Chickweed	44	5	259
arvense	Field Chickweed	44	6	259
alpinum	Hairy Alpine Mouse-ear Chickweed	44	7	260
latifolium	Broad-leaved Alpine Mouse-ear Chickweed			260
trigynum	Stitchwort Mouse-ear Chickweed			261
aquaticum	Water Mouse-ear Chickweed	44	1	261
Cheiranthus Cheiri	Wallflower	27	1	132
Cherleria sedoides	Mossy Cyphel	45	1	261
Chelidonium majus	Larger Celandine	12	5	74
Clematis Vitalba	Traveller's Joy	2	1	16
Cochlearia officinalis	Common Scurvy-grass	17	1	95
Grœnlandica	Greenland Scurvy-grass	17	2	97
Anglica	English Scurvy-grass	17	3	97
Danica	Danish Scurvy-grass	17	4	97
Armoracia	Horseradish	17	5	97
Coronopus Ruellii	Common Wart-cress	20	3	108
didyma	Lesser Wart-cress	20	4	108
Corydalis claviculata	Climbing Corydalis	14	1	76
solida	Solid-rooted Corydalis	14	2	77
lutea	Yellow Corydalis	14	3	78
Crambe maritima	Sea Kale	20	2	106
Delphinium Consolida	Field Larkspur	8	2	43
Dentaria bulbifera	Bulbous Coral-root	21	1	111
Dianthus Armeria	Deptford Pink	36	1	206
prolifer	Proliferous Pink	36	2	206
Caryophyllus	Clove Pink	36	3	207

		Plate	Fig.	Page
Dianthus cæsius	Mountain Pink	36	4	213
deltoides	Maiden Pink	36	5	213
Draba verna	Vernal Whitlow-grass	18	2	99
aizoides	Yellow Alpine Whitlow-grass	18	3	100
incana	Twisted-podded Whitlow-grass	18	4	101
muralis	Speedwell-leaved Whitlow-grass	18	5	101
rupestris	Rock Whitlow-grass	18	6	102
Drosera rotundifolia	Round-leaved Sundew	34	1	178
longifolia	Spathulate-leaved Sundew	34	2	189
Anglica	Great Sundew	34	3	190
Elatine hexandra	Six-stamened Water-wort	35	4	201
Hydropiper	Eight-stamened Water-wort	35	5	202
Epimedium alpinum	Alpine Barren-wort	10	2	55
Erysimum cheiranthoides	Worm-seed Treacle-Mustard	26	1	129
Alliaria	Garlic Treacle-Mustard	26	2	129
orientale	Hare's-ear Treacle-Mustard	26	3	131
Frankenia lævis	Smooth Sea-Heath	35	2	197
pulverulenta	Powdery Sea-Heath	35	3	200
Fumaria capreolata	Ramping Fumitory	14	4	78
officinalis	Common Fumitory	14	5	80
parviflora	Least-flowered Fumitory	14	6	81
micrantha	Small-flowered Fumitory			81
Glaucium luteum	Yellow Horned-Poppy	12	4	72
phœniceum	Scarlet Horned-Poppy			73
violaceum	Violet Horned-Poppy	13	4	74
Helleborus viridis	Green Hellebore	7	3	39
fœtidus	Stinking Hellebore	7	4	40
Helianthemum vulgare	Common Rock-rose	32	1	161
surrejanum	Dotted-leaved Rock-rose	32	5	161
canum	Hoary Dwarf Rock-rose	32	2	163
guttatum	Spotted Annual Rock-rose	32	3	163
polifolium	White Rock-rose	32	4	163
ledifolium	Ledum-leaved Rock-rose	32	6	163
Hesperis matronalis	Dame's Violet			154
Holosteum umbellatum	Umbelliferous Jagged Chickweed	40	5	240
Honckenya peploides	Sea Purslane	43	1	250
Hutchinsia petræa	Rock Hutchinsia	15	5	91
Iberis amara	Bitter Candy-tuft	16	5	95
Isatis tinctoria	Woad	19	3	109
Koniga maritima	Sweet Alyssum	19	2	105

		Plate	Fig.	Page
Lavatera arborea	Sea Tree Mallow	47	1	282
Lepidium latifolium	Common Pepperwort	16	1	92
ruderale	Narrow-leaved Pepperwort	16	2	94
campestre	Field Pepperwort	16	3	94
Smithii	Hairy Pepperwort	16	4	94
Linum perenne	Perennial Blue Flax	45	2	266
angustifolium	Narrow-leaved Pale Flax	45	3	266
usitatissimum	Common Flax	45	4	267
catharticum	Cathartic Flax	45	5	272
Lychnis Flos-cuculi	Ragged Robin	39	1	227
viscaria	Red German Catchfly	39	2	233
alpina	Red Alpine Catchfly	39	3	233
vespertina	White Campion	39	4	234
diurna	Red Campion	39	5	234
Mœnchia erecta	Upright Mœnchia	40	4	240
Malva sylvestris	Common Mallow	46	1	275
rotundifolia	Dwarf Mallow	46	2	280
moschata	Musk Mallow	46	3	282
Matthiola incana	Hoary Shrubby Stock	27	2	135
sinuata	Great Sea Stock	27	3	138
Meconopsis Cambrica	Yellow Welsh Poppy	13	3	71
Myosurus minimus	Common Mousetail	6	5	35
Nasturtium officinale	Water-cress	24	1	120
sylvestre	Creeping Yellow Cress	24	2	123
amphibium	Amphibious Yellow Cress	24	4	124
terrestre	Annual Yellow Cress	24	3	124
Nuphar lutea	Yellow Water-Lily	11	2	61
pumila	Least Yellow Water-Lily	11	3	63
Nymphæa alba	Great White Water-Lily	11	1	57
Pæonia corallina	Entire-leaved Common Pæony	9	1	47
Papaver Argemone	Long Rough-headed Poppy	12	1	64
hybridum	Round Rough-headed Poppy	12	2	66
dubium	Long Smooth-headed Poppy	12	3	66
Rhœas	Common Red Poppy	13	2	66
somniferum	Opium Poppy	13	1	68
Polygala vulgaris	Common Milkwort	35	1	192
Radiola millegrana	Thyme-leaved Flax-seed	45	6	273
Ranunculus aquatilis	Water Crowfoot	4	1	25
hederaceus	Ivy-leaved Crowfoot	4	2	26
alpestris	Alpine White Crowfoot	4	3	27
Lingua	Great Spearwort	4	4	27

		Plate	Fig.	Page
Ranunculus Flammula	Lesser Spearwort	4	5	27
Ficaria	Lesser Celandine	5	1	28
auricomus	Wood Crowfoot	5	2	30
sceleratus	Celery-leaved Crowfoot	5	3	30
bulbosus	Bulbous-rooted Crowfoot	5	4	31
repens	Creeping Buttercup	5	5	32
acris	Meadow Crowfoot	6	1	34
hirsutus	Pale Hairy Crowfoot	6	2	34
arvensis	Corn Crowfoot	6	3	34
parviflorus	Small-flowered Crowfoot	6	4	35
Raphanus Raphanistrum	Wild Radish	30	1	154
maritimus	Sea Radish	30	2	156
Reseda Lutcola	Dyer's Rocket	31	1	157
lutea	Wild Mignonette	31	2	157
fruticulosa	Shrubby Rocket	31	3	160
Sagina procumbens	Procumbent Pearl-wort	40	1	237
apetala	Annual Small-flowered Pearl-wort	40	2	239
maritima	Sea Pearl-wort	40	3	239
Saponaria officinalis	Common Soapwort	37	1	213
Silene acaulis	Moss Campion	38	1	217
inflata	Bladder Campion	38	2	219
maritima	Sea-side Campion	38	3	220
Otites	Spanish Catchfly	38	4	221
Anglica	English Catchfly	38	5	221
nutans	Nottingham Catchfly	38	6	222
Italica	Italian Catchfly			224
conica	Striated Corn Catchfly	38	7	224
Armeria	Common Catchfly	38	8	226
noctiflora	Night-flowering Catchfly	38	9	226
Sinapis arvensis	Charlock	29	1	143
alba	White Mustard	29	2	149
nigra	Common Mustard	29	3	149
tenuifolia	Wall Rocket	29	4	152
muralis	Sand Rocket	29	5	153
Sisymbrium officinale	Common Hedge-Mustard	25	1	124
Irio	London Rocket	25	2	126
Sophia	Flix Weed	25	3	128
Spergula arvensis	Corn Spurrey	41	1	241
nodosa	Knotted Spurrey	41	2	242
saginoides	Pearl-wort Spurrey	41	3	243
subulata	Awl-shaped Spurrey	41	4	243
Stellaria media	Chickweed	42	2	243
holostea	Greater Stitchwort	42	3	245
graminea	Lesser Stitchwort	42	5	248
glauca	Glaucous Marsh Stitchwort	42	4	248

		Plate	Fig.	Page
Stellaria uliginosa . . .	Bog Stitchwort	42	6	249
nemorum . . .	Wood Stitchwort	42	1	249
Subularia aquatica . . .	Water Awl-wort	18	1	98
Teesdalia nudicaulis . .	Naked-stalked Teesdalia	15	6	92
Thalictrum alpinum . .	Alpine Meadow-Rue	2	2	18
minus	Lesser Meadow-Rue	2	3	18
flavum	Yellow Meadow-Rue	2	4	19
Thlaspi arvense	Mithridate-Mustard	15	1	87
perfoliatum . . .	Perfoliate Penny-cress	15	2	88
alpestre	Alpine Penny-cress	15	3	89
Trollius Europæus . . .	Mountain Globe-flower	7	1	36
Turritis glabra	Smooth Tower-Mustard	23	1	118
Viola hirta	Hairy Violet	33	1	165
odorata	Sweet Violet	33	2	166
palustris	Marsh Violet	33	3	173
canina	Dog Violet	33	4	174
pumila	Dwarf Yellow-spurred Violet . . .	33	5	175
lactea	Cream-coloured Violet	33	6	175
tricolor	Pansy Violet, or Heartsease . . .	33	7	176
lutea	Yellow Mountain Violet	33	8	177



THE

FLOWERING PLANTS

OF

GREAT BRITAIN.

As one of the chief objects of this work is to aid those who have not hitherto studied Botany, some slight explanation is necessary of its mode of arrangement, and of the terms employed. English, rather than Latin, terms have in all cases been used by the writer, so as to adapt the Flora to the use of the unscientific.

The method of classification is that which is termed the Natural System. The system of Linnæus, though well suited for convenience of reference, has yielded in our day to an arrangement which is founded on the more true affinities in plants, and by which they are grouped according to their nature, structure, and properties, instead of being classed by more arbitrary signs.

Various Natural Systems have been employed by botanists, but that which is now chiefly used in Britain is one adapted from those of Jussieu and Decandolle. By this plan, the whole Vegetable Kingdom is divided

into three great Classes. These are divided into Sub-classes, which are again divided into Orders, and these orders into Genera, containing Species and Varieties. The last-named distinction is not always so obvious as the others, and it is one on which botanists often differ, some regarding only as a variety that which others have determined to be a species. A Species is a collection of individual plants which resemble each other in all important points, these characters being found constantly in the plants under all circumstances of soil or situation. A Variety is a difference which is not permanent nor essential. Thus, the colour of a flower, an unusual number of the petals, the thorny or smooth condition of its stem, is sufficient only to constitute a variety, because under other conditions of its growth the plant would be likely to lose these peculiarities.

The following explanation of the descriptive terms used will aid the reader to comprehend them:—

The Root. This often consists, as in most Grasses, of a tuft of fibres (*Fig.* 1), with pores at their points, by means of which they absorb nutriment from the soil. In other cases, however, the nourishment drawn by the fibres is received in another organ; and this part is then termed the *root*, and the fibres the *rootlets*. The principal forms of the root are—

The *Creeping* root (2), of which we have familiar examples in the Couch-grass and Horseradish.

The *Spindle-shaped* root (3): examples, Parsnep and Carrot. A spindle-shaped root ending abruptly, as if bitten off, is termed *premorse*, as in the Premorse Scabious (4).

The *Tuberous* root consists of one or more roundish solid masses, from the surface of which rootlets and buds arise, as in the Potato (5).

The *Bulbous* root (6) is a round firm mass, with fibres issuing from its base, and a bud at its summit. It is formed either of fleshy scales, as in the White Lily (7); of several concentric coats, as in the Onion; or of one uniform solid mass, like the Crocus (6).

The Stem. A stem is said to be simple when without branches, and bearing only leaves and flowers, or leaves only, as the Grass of Parnassus (8).

A *compound* stem is repeatedly and irregularly branched, as in the Pearlwort (9).

A stem is termed *forked* when it divides into two branches of equal, or nearly equal, size, as in the Annual Knawel (10).

An *ascending* stem is one which, on first emerging from the root, is horizontal, and then becomes erect. When several stems grow from one root, the central one is often erect, and the others ascending, as in the Common Mallow (11).

A *prostrate* stem runs along the ground, and never becomes erect.

A *creeping* stem runs along the ground, and sends out roots from its joints. Some plants have erect stems and creeping scions or shoots from the base, as the Creeping Buttercup (12).

The Axil. The angle between the leaf and the stem. A flower or bud rising from this angle is termed *axillary*. The blossoms of the Wall Pellitory, or the Balsam, are axillary between the leaves and the stem (13).

The Leaf. Leaves springing around the root are termed *radical*, as the Primrose; those which grow on the stem are *alternate*, as the Balsam (13); or *whorled*, as the Common Cleavers (15); or *opposite*, as the Pink (14).

Leaves without stalks are termed *sessile*, as the Eryngo (16).

A leaf which is composed of one piece only is said to be *simple*, as the Marsh Marigold (17); a *ternate* leaf consists of three leaflets on a common stalk, as in the Clover (18); a *quinate*, of five, as in Marsh Cinquefoil (19). A leaf is termed *pinnate*—from *penna*, a feather—when a number of leaflets are arranged along each side of a common leaf-stalk, as in the Brier-rose or the Vetches (20). A simple leaf is sometimes wavy at the edge, as in the Oak (21); or three, five, or seven-lobed, as in the Mallow (22). A leaf is said to be *palmate* when the five or seven lobes are more than half-way divided, leaving a portion in the centre of the leaf like the palm of the hand, as in the Hellebore (24).

A leaf is *pedate*, when the two side lobes are divided a second time at the edge near the stalk (25).

A *pinnatifid* leaf is one which is cut regularly into narrow segments, almost to the middle rib, as in the Small Scabious.

A *pectinated* leaf is one whose narrow segments resemble the teeth of a comb, as the Water Violet.

A *peltate* leaf is one which has a stalk attached at, or near its centre, as the Garden Nasturtium (26).

A *perfoliate* leaf is one, through the centre of which a stalk passes, as in Hare's Ear (27).

Two leaves joined at their bases, and having a stem

passing through them, are termed *connate*, as in the Chlora or Yellowwort (28).

A leaf which clasps the stem at its base, like that of the Yellow-horned Poppy, is termed *amplexicaul*.

The margin of a leaf may be *entire*, as in the Soapwort (29); *crenate*, as in Marsh Pennywort (30); *serrate* (saw-edged), as in Rose (31); *toothed*, as in Enchanter's Nightshade (32); or *fringed*, as in Rock-rose (33).

The terms employed in this volume, to describe the forms of leaves, are—

Hair-like; as in Fennel (34).

Linear; as in Grass.

Strap-shaped; as in Sand Strapwort (35).

Oblong; as in Rock-rose (33).

Elliptical; oval, with both ends alike, as in the leaflets of Rose (31).

Egg-shaped; oval, with the base broader than the extremity, as in Pear (36).

Inversely egg-shaped; oval, with the base narrower than the extremity, as in Brookweed (37).

Rounded; as in Winter Green (38).

Heart-shaped; as in the Violet (39).

Inversely heart-shaped; as in the leaflets of Medick (18).

Kidney-shaped; as in Ground Ivy (40).

Arrow-shaped; as in Tower Mustard (41).

Halbert-shaped; arrow-shaped, with the barbs turned outwards, as in the Common Pink Bindweed.

Angular; as in Frosted Sea Orache (42).

Sword-shaped; as in Water Flag (43).

Stipules: two little wing-like pieces often seen at the

base of the leafstalk, as in the Rose (44) and the Vetches. In the former, the stipule is oblong; in the latter, it is often arrow-shaped.

Bracts are the small leaves, often situated beneath the flower, as in the Broom Rape (45), and Evening Primrose (46). When several of these floral leaves grow in a whorl, they form what is termed an *involucre* (48). In plants of the Umbelliferous tribe, they often grow at the base of the general and partial umbels, as in the Parsley (47); and in Compound flowers, as the Dandelion, they are numerous at the base of the heads of flowers. In this flower they are more like scales than small leaves.

The Flower. The Calyx or flower-cup. This enfolds the bud before fully blown, and generally afterwards surrounds the blossom. It is usually green, and its several leaves are termed *sepals*. Sometimes the sepals unite at the base, forming a true cup, but the calyx varies much in form. When composed of two distinct lobes, one of which overhangs the other, it is termed *gaping*: in some cases it is double (49): and in the Compound and some other flowers, it is at first a mere ring, which ultimately becomes the pappus or down (50).

The Corolla. This is the brightly tinted portion of the flower, which is supported by the calyx. The divisions are termed *petals*. The petals are either distinct, as in the Rose or Wall-flower, in which the upper large part of the petal is termed the *limb*, and the lower the *claw*; or they are united below, like the Primrose, the flat portion of which is called the *border*, the lower the *tube*. The corolla has usually as many petals as there are sepals in

the calyx, and if these are all of the same size and shape, the corolla is termed *regular*, as in the Brier-rose (51).

The most common forms of the regular corolla are—

Salver-shaped; as in the Primrose and Phlox (52).

Funnel-shaped; as in the Cowslip (53).

Wheel-shaped; when the tube is very short and its margin quite flat, as in the Speedwells (54).

Bell-shaped; as in the Hyacinth (55).

Trumpet-shaped; as in the Convolvulus (56).

The irregular one-petalled corolla is in some cases divided into two lobes, one of which overhangs the other. It is then termed *labiate* or *lipped.* The Sage, Mint, and Thyme, are common examples of labiate flowers. If the lobes are open, as in the Yellow Dead Nettle (57), the corolla is said to be *gaping;* if closed, as in the Toadflax (58), it is termed *personate*, from *persona*, a mask. Compound flowers, like the Daisy, Chamomile, &c., have frequently two kinds of florets in one blossom; those of the disk, or centre, being of tubular form; those of the ray, strap-shaped.

When four petals are placed crosswise, the blossom is termed *crueiferous*, as the Wall-flower (59).

Papilionaceous, or butterfly-shaped blossoms, are those, which, like the Pea or Vetch (60), have five irregular petals, the upper one large, and termed the *standard;* the two side ones, called the *wings;* and two lower ones, which are often combined, and which are termed the *keel.*

All flowers have not both calyx and corolla. The Lily and Tulip are examples of flowers without a green calyx; the little Pearlwort has no coloured corolla. The word *perianth* is used in both cases to express the part of the

flower which encloses the stamens and pistils. Some flowers, as the Water Starwort, have neither calyx nor corolla (61). When the perianth is said to be *double*, it signifies that both corolla and calyx are present.

The Stamens. The stamens (62) are the small organs which stand around the centre of the perianth. The lower part of the stamen is termed the *filament;* the *anther* is the upper part. When the filament is slender throughout, it is said to be threadlike; but if thicker at the base and tapering at the point, it is termed *awl-shaped.* The anther is most frequently oblong, composed of two lobes and two cells, which contain the fine yellow, white, or black dust, called the *pollen.* Anthers without filaments are said to be *sessile.* Sometimes the filaments are united into little bundles, as in the St. John's Wort (63); sometimes they form a hollow tube, as in the Mallow (64), the anthers remaining separate, and being termed *free;* sometimes they are united into a ring, as in the Heath (65).

The Pistil (66) is the central part of the flower, and is composed of the *ovary* or germen (*a*), which contains the rudiments of the future seed; the *style* or column (*b*); and the *stigma* (*c*), which is at the summit of the style. It is sometimes a mere viscid point, but more often it is a flat, lobed, or globular organ.

Most flowers have but one pistil; but there is frequently a single ovary bearing several styles and stigmas. The ovary, in such cases, usually consists of several cells, each of which, including its style and stigma, is termed a *carpel* (67). The same name is given to the ovaries in flowers when they are separated, or in others, when they are united.

The same plant sometimes bears flowers, some of which have only stamens, while others have only pistils. (68—69.) Willow and Oak. Such are termed *monœcious* plants. In other cases the pistils and stamens grow, not only on different flowers, but on different plants. These are then said to be *diœcious*. As those flowers only which contain pistils produce seed, these are termed *fertile;* while those which have stamens only, are said to be *barren*.

When the ovary is inserted above the base of the perianth it is termed *superior*, as in the Buttercup (70); when below, *inferior*, as the Rose. The perianth is termed superior or inferior, according as it is inserted above or below the ovary.

The Fruit. The fruit is the enlarged ovary, and is the naked seed, or the seed with its case or covering, also termed the *pericarp*. The following are some of its various forms :—

The *capsule;* a dry case or bag, either opening by valves, as in the Violet; by teeth, as in Lychnis; by pores, as in Poppy; or by dividing into an upper and under portion, as in the Pimpernel (71).

The *silique;* a dry long pod, consisting of two halves or valves, and a central partition, to the internal margin of which the seeds are attached, as in the Cabbage (72).

The *silicle* or pouch is a shorter, broader pod, like that of the Shepherd's Purse.

The *pod* or legume is a long seed-vessel without a partition; the seeds forming a single row, as in the Pea (73).

The *berry;* a pulpy fruit, in which the seeds are immersed, as the Raspberry or Currant (74).

The *nut;* a dry fruit in a hard shell, as the Hazel (75).

The *drupe;* a nut enclosed in a pulpy covering, as the Plum (76).

The *cone;* a number of scales overlapping each other, each of which covers two seeds (77).

The Seed. This is said to be *dicotyledonous* when composed of two lobes, like the Bean (78), which are termed the *cotyledons*, and enclose the *plumule*, or embryo of the future plant. As the seed germinates, the cotyledons either rise above the ground, as in Mustard, or remain beneath, as in the garden Pea.

Receptacle. This is the part of the flower on which all the others rest. It is very obvious in the Dandelion, where it is white and dotted (82). It is sometimes conical, as in the Daisy (79); chaffy, as in Cat's Ear (80); bristly, as in Thistle (81).

Nectary. Any distinct organ which contains honey. In the Crown Imperial it consists of a number of cells around the centre of the flower. In the Crowfoot (83) it is a scale at the base of the petals.

The Inflorescence of a flower, is the mode in which the blossoms are placed on the stem.

A flower-stalk rising directly from the root, and bearing no leaves, is termed a *scape*, as in the Daisy or Primrose (84).

It is *axillary* when inserted in the angle between the leaf and stem, as in Balsam (18).

It is *terminal* when at the extremity of the stem, as the Violet and Grass of Parnassus (8).

A flower-stalk bearing one flower only, is termed *simple*, as the Daisy.

A stalk bearing a number of flowers seated on it one

above another, like those of the Plantain, is termed a *spike* (85).

When, instead of being sessile, the flowers grow on simple stalks, it is a *cluster*, as in Melilot (86).

A *panicle* is a branched *cluster*, as in the Oat or Spurrey (87).

A *corymb* has the lower flowers on long stalks, and the upper either nearly or quite sessile, as in the Stock (88).

A *cyme* has the stalks irregularly branched, but the flowers nearly level at the top, as in the Laurustinus and the Elder (89).

The *umbel* has the flower-stalks springing from a common centre, and bearing each a single flower, as in Ivy (90). When instead of a single flower on each stalk, there is a smaller umbel, the inflorescence is a *compound umbel*, the larger division being termed a *general*, and the smaller a *partial* umbel (91).

The *head* is like a simple umbel, except that the flowers are all sessile, as in Scabious (92).

A *catkin* resembles a spike, except that the flowers are enclosed within a small scale or bract, as in the Hazel (93).

The Vegetable Kingdom is divided into the three great Classes of DICOTYLEDONES, MONOCOTYLEDONES, and ACOTYLEDONES.

CLASS I. DICOTYLEDONES.

This Class consists of such plants as produce seeds divisible into two lobes or cotyledons. It is divided into four Sub-classes,—Thalamifloræ, Calycifloræ, Corollifloræ, and Monochlamydeæ.

Sub-class I. THALAMIFLORÆ.

Flowers having both calyx and corolla; *petals* distinct, inserted into the receptacle, or *thalamus*; *stamens* springing from the base of the *ovary*. This Sub-class contains twenty-two British Orders.

Sub-class II. CALYCIFLORÆ.

Flowers with calyx and corolla; *sepals* distinct, or united; *petals* distinct; *stamens* inserted in the calyx, or close to its base. This Sub-class contains eighteen British Orders.

Sub-class III. COROLLIFLORÆ.

Flowers with calyx and corolla; *petals* united, bearing the stamens. In this Sub-class there are twenty-seven British Orders.

Sub-class IV. MONOCHLAMYDEÆ.

Perianth single or none, no plant in this Sub-class having both calyx and corolla. It contains thirteen British Orders.

CLASS II. MONOCOTYLEDONES.

Seeds with a single cotyledon. It contains two Sub-classes,—PETALOIDEÆ and GLUMACEÆ.

Sub-class I. PETALOIDEÆ.

Flowers with petals. This Sub-class contains sixteen British Orders.

Sub-class II. GLUMACEÆ.

Flowers formed of chaffy scales, or *glumes*. This Sub-class contains the Grasses and Sedges.

CLASS III. ACOTYLEDONES.

Flowerless plants. It consists of the Ferns, Mosses, Liverworts, Lichens, Sea-weeds, and Fungi.

NATURAL ARRANGEMENT OF PLANTS.

Class I. DICOTYLEDONOUS OR EXOGENOUS PLANTS.

The plants of this most extensive Class of the Vegetable Kingdom are termed Dicotyledonous, because their seeds are formed of two or more *cotyledons*, or lobes; and Exogenous, because the stems of the plants increase by new layers on the *outside* of the pith, or central fibre, though within the bark. Dicotyledonous plants have a distinct deposition of *pith*, *cellular tissue*, *spiral vessels*, *wood*, and *bark*, which in Monocotyledonous plants are all confounded. In shrubs and trees of the former class, the wood is arranged in concentric layers, the hardest part being near the pith; they are also branched, as the Oak and Elm, and not simple, like the Palm, which is a Monocotyledonous tree. The *leaves* are veined in a network, and are distinctly articulated with the stem. The *flowers* are furnished with stamens and pistils, and their parts are usually arranged in the number of five or four, or of some multiple of five or four.

Sub-class I. Thalamiflorae.

Flowers furnished with calyx and corolla; *petals* distinct, inserted into the receptacle, or *thalamus*; *stamens* springing from below the base of the ovary.

Natural Order I. RANUNCULACEÆ—THE CROWFOOT TRIBE.

Calyx of mostly five or six pieces or *sepals*, frequently deformed, as are sometimes the petals, which are generally five or more in number, but occasionally wanting; *stamens* usually numerous, inserted on the receptacle; *ovaries* usually many; *fruit* consisting of one or many-seeded carpels; in Actæa, a berry. Herbs or shrubs. Leaves often divided. Plants acrid and poisonous, some of them—as Aconitum—eminently so. This extensive tribe of plants may be found in most of the temperate countries of the globe, but they are unknown in the lowlands of the tropics. They characterize a cold, damp climate.

* *Carpels one-seeded.*

1. Clématis (Traveller's Joy).—*Sepals* 4—6, resembling petals; *corolla* wanting; *carpels* terminated by a long, mostly feathery, awn. Name from the Greek *cléma*, the shoot of a vine.

2. Thalíctrum (Meadow Rue).—*Sepals* 4—5; *corolla* wanting; *carpels* without tails, sessile, or nearly so. Name from the Greek *thallo*, to flourish.

3. Anemóne (Wind-flower).—*Sepals* and *petals* alike, 5—15; *involucre* of three-cut leaves, usually distant from the flower. Name from the Greek *anemos*, the wind, because the flowers are easily moved by the wind.

4. Adónis (Pheasant's-eye).—Calyx of 5 *sepals*; *petals* 5—10, without a nectary; *carpels* without awns. Name from *Adonis*, a youth who was killed by a wild

boar, and whose blood was fabled to have stained the flower.

5. Ranunculus (Crowfoot, Spearwort, &c.).—Calyx of 5 (rarely 3) *sepals*; *petals* 5 (rarely numerous), with a pore or nectary at the base; carpels without awns. Name from *rana*, a frog; these plants growing much where frogs abound.

6. Myosúrus (Mouse-tail).—Calyx of 5 *sepals*, prolonged at the base into a spur; *petals* 5; *carpels* crowded into a lengthened spike. Name, Greek for a mouse's tail.

** *Carpels many-seeded.*

7. Tróllius (Globe-flower).—*Sepals* about 15, coloured; *petals* 5, or many, small, narrow, flat. Name said to be derived from *trol* or *trolen*, a ball or globe, in old German.

8. Cáltha (Marsh Marigold).—*Sepals* and *petals* alike, 5 or more. Name from the Greek *cálathus*, a cup.

9. Helléborus (Hellebore).—*Sepals* 5, like petals, persistent, that is, not falling off; *petals* 8—10, small, tubular; *carpels* 3—10. Name from the Greek *helein*, to injure, and *bóra*, food.

10. Aquilégia (Columbine).—*Sepals* 5, petal-like, soon falling off; *petals* 5, tubular, gaping upwards, and terminating in a horn-shaped spur or nectary; *carpels* 5. Name from the Latin *aquila*, an eagle, the claws of which its nectaries are fancied to resemble.

11. Delphínium (Larkspur.)—*Sepals* 5, petal-like, soon falling off, the upper one helmet-shaped, with a long

spur at the base; *petals* 4, the two upper on long stalks, and concealed in the spurred sepal; *carpels* 3—5. Name from *delphin*, a dolphin, to which animal the upper leaf bears a fancied resemblance.

12. Aconítum (Monk's-hood).—*Sepals* 5, petal-like, the upper one helmet-shaped but not spurred; *nectaries* 2, stalked, tubular at the extremity, and concealed beneath the helmet-shaped sepal; *carpels* 3—5. Name of uncertain origin.

13. Actæa (Bane-berry).—*Sepals* 4, soon falling off; *petals* 4; *fruit* a many-seeded berry. Name from the Greek *acté*, the Elder, the leaves somewhat resembling those of that plant.

14. Pæonia (Peony).—*Sepals* 5, unequal; *petals* 5—10; *carpels* 2—5, with fleshy stigmas, formed of two plates. Name from *Pæon*, a Greek physician, who is said to have healed wounds with the plant.

1. Clématis.

1. *C. Vitalba* (Traveller's Joy).—Stem climbing, leaves pinnate, leaflets ovate, and heart-shaped at the base; foot-stalks of leaves twining; flower-stalks rather shorter than the leaves. Plant perennial. This beautiful shrub, with its dark-green foliage, and its numerous blossoms of greenish-white hue, is very common in the hedges in those counties where chalk or limestone abounds. Gerarde well named it the Traveller's Joy, for it may be seen far away, decking the hedges, in May and June, with its blossoms, and holding itself to the stronger plants near it by the twisting leaf-stalks which serve as

tendrils. In the early part of winter its snowy tufts of seeds are very conspicuous, and as they become soiled by wind and weather, they look like masses of cobwebs.

This clematis is our only British species, though either this or similar kinds abound in the woods of warmer regions of the globe, spangling the forests of America and New Zealand, like those of Australia, with thousands of silver stars. Though our native kind is scentless, many of the species are exquisitely fragrant,—the sweet-scented Virgin's Bower of our garden (Clématis flámmula) being very much so.

The plants of this genus are all acrimonious. Of the scented garden kind, Miller remarks, that "if one leaf be cropped on a hot day in the summer season, and bruised, and presently put to the nostrils, it will cause a smell and pain like a flame." Our native species is corrosive, but its acrid principle is destroyed either by the withering influence of the sun, or by infusing the plant in boiling water. The fresh leaves are said to be used by beggars to cause wounds, in order to excite compassion; hence the French sometimes term this shrub *Herbe aux gueux*, though they also call it by the more pleasing names of *Consolation des voyageurs*, and *Viorne des pauvres*. It is undoubtedly poisonous in its fresh state; but the leaves of this plant are said, when dried, to form good fodder for cattle, and they were once used in medicine. The hollow stem, when old, is cut into small pieces by the German shepherds, and smoked for pipes, the acrid flavour of the wood being fancied somewhat to resemble that of tobacco. Kentish schoolboys use the stem in the same way; and in France

these long stems are woven into rustic baskets and bee-hives. The seeds are very numerous, and easily dispersed by means of their feathery crown; and as they retain their germinating principle for a great length of time, the plant is sometimes more abundant in the hedge than the farmer would desire, as it suffocates the bushes among which it climbs. Country people call it Withywind, Wild Vine, Old Man's Beard, and Virgin's Bower; but Gerarde's name, given it from "decking and adorning waies and hedges where people travel," is one by which it is very generally known in England.

2. Thalíctrum (Meadow Rue).

1. *T. alpínum* (Alpine Meadow Rue).—*Stem* simple, nearly leafless; *flowers* in a simple terminal cluster, drooping when fully blown. This is a graceful and elegant little plant, with delicate white blossoms, growing on a stem from 4 to 6 inches high; but it occurs only on the pastures of the mountains of Wales or Scotland. It flowers in June and July, and is perennial. It is sometimes called Feathered Columbine, and the French term it *Rue des prés*. The name of the genus, taken from the Greek of "to flourish," is well given, because of the lively green tint of the foliage of this, as well as of our other native kinds. The leaves are notched with rounded notches, and spring from the roots on long stalks.

2. *T. mínus* (Lesser Meadow Rue).—This species is so much confined to stony fields of chalky and lime-stone soils, that it has by some botanists been termed *T. calcareum*. Its *stem* is zigzag, and branched, from

1 to 2 feet high; its *leaves* are thrice pinnate, the *leaflets* three-cleft, and they are covered with a sea-green powder. When the plant thrives well, the stem usually becomes hollow. The flowers have an unpleasant odour; they are lilac, and drooping, and so full of stamens that they seem like little tufts of gold threads; they appear in June and July, and the plant is perennial. Several varieties of this species occur, and these have by some botanists been regarded as distinct species.

3. *T. flávum* (Yellow Meadow Rue).—*Stem* erect, 3 or 4 feet high, and branched; *leaves* twice pinnate; *flowers* crowded, yellow, and not drooping. This species, which is found on the banks of rivers and ditches, is more generally known in England than either of the others. The Dutch term it *Waterruit*. It is rare in Scotland, being found chiefly in the Vale of Clyde. Its leaflets are broadly wedge-shaped and three-cleft. Various handsome species of meadow rue are cultivated in the garden, but they have no old renown, and must not be confounded with the Common Rue (Ruta gravéolens), which was brought from the South of Europe, and is now in every cottage garden. This was an old favourite herb with the monks, and was never absent from the "physic garden" of the monastery. It was called Herb of Grace, because of its supposed virtues, and because mingled with the "holy water" used for sprinkling the congregation before and after service. Thus, Ophelia says,—

"We call it Herb of grace o' Sundays."

It is a plant of some power, and one of its kindred is said to blister the hands of him who gathers it without gloves.

3. Anemóne (Wind-flower).

1. *A. nemorósa* (Wood Anemone).—*Leaves* ternate, *leaflets* lobed and cut. Flower drooping; *sepals* or *petals* six; *carpels* without tails. The sunshine of spring has hardly dawned upon the leafless woods, before this flower is in blossom. Often as early as the middle of March, it gleams among the primroses, and soon it covers as with a white carpet many a secluded copse. Pliny said of the anemone, that it never blooms but when the wind blows; and our own species is no exception, for it grows on high mountainous places, and comes to the wood when winds are wildest. As Clare has said, these flowers—

> "Dyed in winter's snow and rime,
> Constant to their early time,
> White the leaf-strewn ground again,
> And make each wood a garden glen."

The anemone bears the name of Wind-flower in other lands than ours. It is *L'herbe au vent* of the French, but the form of its petals gives it the name in Italy of *Fiore stella*. Charlotte Smith has well described its starry appearance:—

> "He there
> Gathers the copse's pride, Anemones,
> With rays like golden studs on ivory laid,
> Most delicate! but touch'd with purple clouds,
> Fit crown for April's fair but changeful brow."

Sometimes the colour of the wood anemone is of a most delicate crimson; and it was, perhaps, because of this



faint flush on its white petals that the Egyptians made it the emblem of sickness. It is occasionally found tinted with a pale sky-blue colour. Usually, wherever we find this flower, it grows in great abundance; but there are some counties, as Essex, in which it is rare. Its leaves are of a very dark green, the stem about a foot and a half high, and the roots form a strong network of fibres, which sometimes runs over a great extent of ground far beneath the surface. The plant is most luxuriant on moist soils; it blossoms till about the end of May, and is perennial. It grows very far north, and is very common in the woods of North America. Mr. Lyell saw it in the woods of Virginia, growing beside our beautiful purple wood cranesbill (Geranium sylvaticum) and amidst multitudes of scentless violets.

2. *A. pulsatílla* (Pasque Flower).—*Leaves* as well as the involucre doubly pinnatifid; *flower* slightly drooping; *sepals* or *petals* 6; *carpels* with feathery tails. This species grows on shorter stalks than the wood anemone, being seldom more than two or three inches high. Its dark rich purple stars, when half unfolded, glitter in the sunshine like satin, on account of the soft silky hairs with which the flower is covered externally, and which renders the young buds extremely pretty. They open in April or May, and the name of the plant has a reference to the Paschal or Easter season. Several flowers, both in France and England, are called Easter flowers: thus *Paquerette* is one of the French names of the daisy, and our gardeners have an Easter hyacinth; but this anemone has better claim to its name than the other plants, because of the uses to which it was formerly applied.

The petals of the flower yield a bright clear green dye, and the whole of the plant gives a good rich green colour. This, with other wild flowers, was much used in days when in England the custom prevailed of staining eggs of some richly-marbled tints, and presenting them as Easter gifts, under the name of Pask, Paste, or Pace eggs. This practice, still so common on the Continent, is now little used in our country; yet even in our days, Pasch eggs are to be found at Easter, in different parts of the kingdom, often beautifully mottled with dyes obtained from logwood, or from the flowers of our fields. Our anemone is not now, however, required, as it was in the days of Edward I., when, as ancient records tell, four hundred eggs were bought to be stained and gilded for the royal household; and the flower is not frequent enough to afford us a dye available for any more important purpose. We must be content to prize it for its beauty in those woods where it is plentiful, but it is not a common flower, growing chiefly on high pasture lands. It is found still further north than the wood anemone, and Sir John Franklin saw it in blossom on the shores of Hudson's Bay, on the 10th of May. Like most of its tribe, its properties are of a very acrid nature, and when laid upon the skin, it will raise a blister far more difficult to heal than that of the Spanish fly. If the leaves and flowers be taken with distilled water, they prove emetic; but the root has a sweet flavour. Cattle refuse this plant, though the goat, which seems able to eat the most poisonous herbs, appears to relish this. It is perennial, and is the only one of our wild anemones which has silky or feathery awns. These are very beautiful, and

float upon the winds of the early summer, as does the thistle-down of the later season.

3. *A. apennína* (Blue Mountain Anemone).—*Leaves* thrice ternate, segments lobed and cut, *involucres* stalked, ternate and cut; *sepals* or *petals* 12 or more; *tails* not feathery. This anemone, which is of a most brilliant blue colour, is in blossom in April and May; but it is very rare, and is a doubtful native of our woods. It has been found in Wimbledon woods, Surrey; near Harrow; Luton Hoe, Bedfordshire; near Berkhamstead, Essex; and Cullen, Banff. It is sometimes a border-flower of the garden.

4. *A. ranunculoides* (Yellow Wood Anemone).—*Leaves* ternate or quinate; *leaflets* cut and toothed; *involucres* shortly stalked, ternate, cut and toothed; *sepals* or *petals* 5—6; *carpels* not feathery. This flower, like the last, is rare, and probably not truly wild. The blossoms appear in May or June, and are of bright yellow colour. It has been seen in the woods at Wrotham, Kent, and at King's Langley, Herts.

4. Adónis (Pheasant's Eye).

1. *A. autumnális* (Corn Pheasant's Eye).—*Petals* concave, forming the blossom into a cup; *stem* branched; *leaves* much divided. This plant is the only British species, and is by many writers considered a doubtful native, but it often occurs in corn-fields. It has been found about London, Isle of Wight, Norfolk, Gloucestershire, Glasgow, and Dublin; and the author has gathered it from corn-fields near Maidstone. It blossoms in June,

and remains till autumn, the deep crimson flowers resembling the buttercup in shape. It had the old English names of Rose à rubie, and Red Maythes, by which Gerarde says it was known to the "herbe women" in his time, but it is called by the name of Adonis throughout Europe, and connected with the classic fable which tells that the blood of the youth Adonis stained its petals. It was a favourite flower with our old poets, sometimes for the sake of the rhyme being called, as by Brown in his Pastorals, Adon. Ben Jonson tells the nymphs to bring fair Adonis' flower in their garland. Drummond of Hawthornden alludes to it, and Shakespere refers to the legend on more than one occasion. The French, Dutch, Germans, and Italians, all commonly call it Adonis or Adonide; but in France it has, besides, the names of *Aile de perdrix*, *Aile de faisan*, and *Goutte de sang*. Shakespere makes one of his personages say,—

> "Thy promises are like Adonis' gardens,
> That one day bloom'd, and fruitful were the next;"

but our poet has somewhat misapplied the circumstance of these gardens, for they were merely pots of fennel or lettuce, which were carried about on the festival of Adonis, and which, as the Greek writers say, were thrown away on the following morning. If, like the Hindoos, we were extremely partial to the colour of red, and believed that it had a wondrous power to exhilarate the spirits, we might wish much to claim our Pheasant's Eye as a native flower; for it is the only one in our fields which has the crimson tint, and the species of the scarlet hue are rare, consisting only of poppies and



pimpernels. It is an annual plant, and grows to the height of two or three feet.

This Adonis, as well as some other species are frequent as garden flowers. It is somewhat acrimonious, but less so than the exotic kinds; one of these (Adonis Capensis), which grows wild on the mountains of the Cape of Good Hope, is said by Thunberg to be commonly used instead of cantharides, by the natives of that country, to raise blisters on the skin.

5. Ranúnculus (Buttercup, Spearwort, &c.)

* *Flowers, White.*

1. *R. aquátilis* (Water Crowfoot).—*Stem* submersed; lower *leaves* divided into hair-like segments, spreading in all directions, and forming a globular mass; floating leaves three-lobed, their edges cut into rounded notches (occasionally wanting). Few of the common plants of our waters add more to their beauty than this. Water-lilies and flowering rushes are indeed gayer flowers, but they are comparatively rare, while this lies in large silvery patches during spring and summer on many of our lakes and ponds. It is a very variable plant, for when growing in softly-running streams, it produces only its tufts of hair-like leaves, which are submersed; but when the water is still, the large flat leaves and strawberry-like flowers are to be seen in great abundance, forming a mass of green and white. This species is singular among a tribe of acrid plants, as being free from their usually deleterious principle, and is, unlike any other ranunculus, very nutritive food for cattle. It has been

proved capable of being converted by agriculturists to very useful purposes. In the neighbourhood of Ringwood, on the borders of the Avon, many cottagers have been known to support their horses and cattle almost wholly on this aquatic plant, a man going in a boat on the water to fetch a quantity of it to the shore, which is soon eagerly eaten by these animals. One man kept five cows and one horse on this food and the small amount of pasture which the common could supply, and not a ton of hay throughout the whole year had been consumed by them. The great quantity of foliage which in some ponds is found on this white crowfoot, affords a constant supply in all seasons, save when the waters are frozen up. It is very difficult to account for the absence of the acrimonious principle in this species, because the presence of water is so often found to increase the noxious properties of vegetables. Thus many plants of the Umbelliferous tribe, and even our common mushroom, are found, when growing on a marshy soil, to possess deleterious properties which do not belong to them in drier localities.

2. *R. hederáceus* (Ivy-leaved Crowfoot).—*Stem* submersed, and throwing out roots or creeping; *leaves* roundish, kidney-shaped, with 3—5 entire lobes; *petals* but little longer than the calyx; *stamens* 5—10. Plant perennial. This plant, which is in flower throughout the summer, is much smaller than the last species, and its blossoms not nearly so attractive. It grows either in shallow waters, or in places where water has stood. Several white-flowered varieties exist, which have by some botanists been considered as distinct species; and

the Alpine white crowfoot of the Clova mountains (*R. alpestris*) is a doubtful native.

* * *Flowers yellow; leaves undivided.*

3. *R. Lingua* (Great Spearwort).—*Leaves* narrow, tapering to a point, without stalks; *stem* erect. Plant perennial.

We have by our stream and river sides, and on bogs, two species of spearwort which are both common flowers, resembling tall buttercups in all things but their slender spear-shaped leaves, to which they owe part of their familiar name. The old Saxon "wort" or "weed" is retained in the English names of many plants, as milkwort, butterwort, &c., all of which were well known to our forefathers.

The foliage of this spearwort is thick and succulent, its stem often three feet high, and of a bright pale green. The plant is conspicuous on the bog, where it towers above the bog asphodel, and the marsh orchis, and the ivy-leaved bell-flowers, and many other lovely plants of the marsh land; for true to the life is Tennyson's description:—

> "One willow over the river wept,
> And shook the wave as the wind did sigh;
> Above in the wind was the swallow,
> Chasing itself at its own wild will,
> And far through the marish, green and still,
> The tangled water-courses slept,
> Shot over with purple, and green, and yellow."

4. *Ranunculus Flammula* (Lesser Spearwort).—*Leaves* narrow, tapering to a point, slightly stalked; *stem* creeping at the base. Plant perennial. This species, which

is much smaller than the last, is often its companion on the bog. It remains in bloom somewhat later, and in some specimens its leaves are covered with a silky down. This lesser species is one of our most acrimonious plants, and is very abundant on the margins of the Highland lakes, as well as on the borders of English ditches. Dr. Withering, who, besides being a good botanist, was a skilful physician, remarks of this Spearwort:—"I feel myself authorized to assert, that in the case of poison being swallowed, it is preferable to any medicine with which I am acquainted." He adds, "that besides its speedy emetic action, it does not excite the painful bodily sensations which are often occasioned by the dose of white vitriol so generally given in such cases." The distilled water of this Spearwort is occasionally used as an emetic; but notwithstanding this authority, its use is not frequent. The plant is sometimes laid on the skin to raise blisters, but these are extremely difficult to heal.

5. *R. Ficária* (Lesser Celandine, or Pilewort).—*Leaves* heart-shaped, or kidney-shaped, and stalked, angular; *sepals* 3; *petals* about 9. *Stem*, single flowered. Plant perennial. Every lover of flowers welcomes the bright glossy blossom, which, while March winds are yet blowing, spangles meadows and banks, and enlivens some of our woodlands where the trees are not thickly planted. It is a flower which has suggested some beautiful thoughts to poets; and few who have looked on it as the sun shone brightly on its star-like form, would not join with Wordsworth in telling its praises; and feel that there was truth in his playful fancy respecting it:—



"I have not a doubt but he
Whosoe'er the man might be,
Who the first with pointed rays
(Workman worthy to be sainted)
Set the sign-board in a blaze,
When the rising sun he painted,
Took the fancy from a glance
Of thy glittering countenance.

"Soon as gentle breezes bring
News of winter's vanishing,
And the children build their bowers,
Sticking 'kerchief-plots of mould
All about with full-blown flowers,
Thick as sheep in shepherd's fold!
With the proudest thou art there,
Mantling in the tiny square."

It is so different in the shape of its blossoms from our Spearworts and Crowfoots, that some writers place the Celandine in a distinct genus, when it is called *Ficaria verna*. The leaves are dark green, varied with a paler tint, very glossy and brittle, and children in country-places in Kent rub their teeth with them to improve their whiteness. They were also formerly boiled and eaten, but the author, who has tried their worth, cannot say much in their favour. Linnæus recommended to the agriculturist the extirpation of this plant from the pasture, on account of the space occupied by its roots and leaves, and because he considered it injurious to herbs growing near it. Cattle refuse to eat it. It is known in some places by the name of Ficaria. And this was given from *ficus*, a fig, because of the little fig-shaped tubercles on the roots. It grows throughout Europe, and Dr. Clarke found it near Moscow, just losing its

blossoms, on the 29th of May. Elliott has some beautiful lines on the flower:—

"The Celandine,
The starry herald of that gentlest gale,
Whose plumes are sunbeams dipp'd in odours fine."

* * * *Flowers yellow; leaves divided; carpels smooth.*

6. *R. aurícomus* (Wood Crowfoot).—*Leaves* smooth, lower ones kidney-shaped, lobed; upper ones deeply divided; *calyx* shorter than the petals. *Petals* unequal in size. Plant perennial.

This is a common flower in woods, and much like the meadow buttercup, but the blossoms are not so large, and the mode of growth more straggling. It blooms in April and May, and, unlike the other Crowfoots, is destitute of acridity.

7. *R. scelerátus* (Celery-leaved Crowfoot).—*Leaves* smooth, cut into oblong segments; root-leaves on stalks; *stem* hollow, juicy; *carpels* collected into an oblong head. This plant, which is very common in watery places, by the sides of pools and ditches, is usually about a foot and a-half or two feet high. In flowers in June, and the blossoms are of pale yellow, and very small size. It is one of the most acrid of the crowfoots, and in former times was in frequent use as a blister; but it is a very unsafe application, for it readily causes a wound, which will not so easily be healed. A friend of the writer's, who had wandered by a stream's side, and carried away thence a large nosegay of forget-me-nots, and yellow flag-flowers, and meadow sweet, had placed among them a quantity of this crowfoot; wearied with the heat, he lay down on a grassy bank, placing his

nosegay near him, that he might enjoy its odours. In the course of a restless slumber, however, his cheek lay upon the flowers, and he was awakened by a tingling sensation, which he at first attributed to the stings of some of those insects which hover over the waters. He soon discovered that it had been caused by this plant; and a redness and irritation remained on one side of the cheek and neck for some hours afterwards, notwithstanding that means were used to allay it. Burnett says that even carrying this plant in the hand will cause inflammation; yet the shepherds of Morlachia, notwithstanding the acridity of its leaves, eat them when boiled. The distilled water procured from this crowfoot is intensely acrimonious, and, when cold, deposits crystals which are inflammable. The plant is found in almost every part of the world, and has been seen very far north, growing by the streams. Another water-side species, termed the Frigid Ranunculus, has been found in some of the highest latitudes yet explored. Dr. Sutherland, when in the recent expedition in search of Sir John Franklin, saw this beautiful little plant growing on the shores of Assistance Bay, a spot which he and his companions had to reach by walking over ice.

8. *R. bulbósus* (Bulbous-rooted Crowfoot).—*Calyx* reflexed; *flower-stalks* channeled; *leaves* cut into three-stalked *leaflets*, which are three-lobed, or three-partite, and cut; *root* bulbous. Perennial. This flower, which grows on a stem about a foot high, is one of the three species commonly called Buttercups. It is the kind which is earliest in blossom, and which in May often embroiders with gold the grassy meadow.

"The daisy and the buttercup,
For which the laughing children stoop
A hundred times the livelong day,
In their rude romping summer play,
So thickly now the pasture crowd
In gold and silver sheeted cloud,
As if the drops of April showers
Had woo'd the sun and changed to flowers."

The three kinds of buttercup are much alike; but this may at once be known by the sepals of its flower-cup, which turn downwards. In old times it was called St. Anthony's turnip; but if that pious hermit, whose name it bears, ever dined on its white hard roots, he must have dried them first well in the sunshine, to remove their acridity. In their fresh state they are not only pungent to the taste, but are emetic in their properties, a fact of which medical students sometimes make a mischievous use, when they persuade their companions in attendance on the botanical lecture to test their excellences by eating them. Their expressed juice is said to cause sneezing, and it was formerly used for raising blisters, especially in cases of gout. The acrimonious principle is in some measure dispelled by drying, and is altogether lost if the roots are boiled. Swine are very fond of them, and will dig them up in the pasture.

9. *R. répens* (Creeping Buttercup).—*Calyx* spreading; *flower-stalks* furrowed; *scions* creeping; *leaves* with three-stalked *leaflets*, which are three-lobed, or three-cleft, and cut. Perennial. This plant, which the lover of flowers admires for its glossy cup, is a troublesome weed to the farmer, running all over the pasture by means of its creeping shoots, which take root where-

ever a leaf is produced. It is most abundant everywhere from June to August, blooming on in shady places, as gardens and churchyards, till nearly winter. As it occurs in so many soils and situations, it assumes a great variety of appearances. When growing by the side of a river or on a marsh, it becomes three or four feet high, with a stem sometimes as thick as a man's finger; whereas on the barren field its stem is not larger than a wheat-straw. Its creeping roots, however, always characterise it, even when in gardens. Cattle reject it as food; but, like all the species, it loses its acridity in drying, and makes good hay. The Buttercup has several old English names, some of which, as Kingcup, are retained in country places. Gold Cups and Gold Balls are names now almost forgotten; and if this flower is the "tufted crow-toe," which Milton wreathes in his garland for

"Young Lycidas, that hath not left his peer,"

then one of its old names is retained in the crowfoot of modern days. We are all familiar with

"The cuckoo buds of yellow hue,"

as one of Shakespere's names for our meadow flower; but the poet calls it elsewhere by another, and in "Cymbeline" it is the Mary-bud:—

"Hark, hark! the lark at Heaven's gate sings,
And Phœbus 'gins arise,
His steeds to water at those springs
On chaliced flowers that lies;
And winking Mary-buds begin
To ope their golden eyes;
With every thing that pretty bin,—
My lady sweet, arise!"

The French call the Buttercup *Bouton d'or*, and it is the *Renoncule* of the Italians. The Germans term it *Die ranunkel.* Ben Jonson calls these flowers King-cups.

10. *R. ácris* (Meadow Crowfoot).—*Calyx* spreading; *flower-stalks* rounded, not furrowed; *leaves* three-cleft, their segments cut into acute divisions, those of the upper leaves very slender. Perennial. This species, which blooms in June and July, is, as its name imports, very acrid. Cattle only eat it when hungry; and Curtis says that if eaten by them in any quantity it will blister their mouths. He adds, that he blistered his own hand by gathering it. The root of this species is long and fibrous; and this buttercup is common on meadows, pastures, and mountainous situations. The common garden flower, with its flat yellow rosettes, called Bachelor's Buttons, is a variety of this upright meadow crowfoot.

**** *Flowers yellow; leaves divided; carpels not smooth.*

11. *R. hirsútus* (Pale Hairy Buttercup).—*Calyx* reflexed; *stem* upright; many-flowered, hairy; *leaves* three-lobed, or three-cleft; lobes obtuse, cut; *root* fibrous. Annual. This plant is common on waste places, having rather paler flowers than the buttercups, and it is smaller than either of them. It might be taken for a stunted specimen of one of the three species last named. It is in flower from June to October, and is sometimes found with double petals.

12. *R. arvénsis* (Corn Crowfoot).—*Calyx* spreading; *stem* erect, many-flowered; *leaves* three-cleft, these lobes generally again divided into three segments. Annual.



This is easily known from all the other species, by its large prickly carpels. The flowers are small, and pale yellow. It is one of the most poisonous of its tribe, and is said to be very injurious to cattle, if, when pressed by want, they eat it. As it is not a plant of the pasture land, however, this does not often occur; but sheep have on some occasions been killed by feeding on it. M. Bruynon, who tried some experiments with it, found that three ounces of its juice killed a dog in three or four minutes. It is in Norfolk called Hungerweed.

13. *R. parviflorus* (Small-flowered Crowfoot).—*Stem* prostrate; *leaves* hairy, three-lobed, and cut; *flower-stalks* opposite the leaves; *calyx* as long as the petals; *seeds* covered with hooked prickles. Annual. This plant is readily known from the other species by its prostrate stem, and little yellow blossoms, which are to be found from May to August in fields and waste places. It grows in corn-fields about London, Norwich, Chelmsford, and in the South and South-west of England. One or two of its petals are often wanting.

6. Myosúrus (Mouse-tail).

M. mínimus (Common Mouse-tail).—*Stem* 4 to 6 inches in height; *leaves* erect and linear, fleshy; *scapes* slender, bearing a small greenish flower. Annual. This little plant, which is found in corn-fields and waste places, especially such as have a gravelly soil, is distinguished from any other British plant by the arrangement of the ripe carpels into a slender form, resembling the tail of a mouse, and sometimes two or three inches

long. This peculiarity is recognised not only in the scientific and English names, but in most of those by which it is known throughout Europe. In France it is commonly called *Queue de Souris*, and it is *Das Mäusechwauzchen* of the German peasant, the *Cola de Raton* of the Spaniard, and the *Corda di topo* of the Italian. It is the only British species; and we have none of the genus in cultivation, but this little plant is known in most of the countries of the Continent.

7. Trólius (Globe Flower).

1. *T. Europæus* (Mountain Globe Flower).—*Calyx* of about fifteen concave erect sepals; *petals* shorter and narrower than the sepals, nearly as long as the stamens. Plant perennial. This flower is more frequent in gardens than in our country landscape, but it is not uncommon on mountainous places at the north of England, as well as on those of Wales and Scotland, flowering in June and July. Its large blossoms are of a delicate yellow, and so globular in form that we wonder not that Conrad Gesner named the genus from *trol* or *trolen*, the old German word for a globe. This plant is also called, by the Dutch, *Drolbloem;* and the French term it *Trolle globuleux;* the Danes, *Engblomme;* and the Swedes, *Bullerblomster*. Our gardeners know it by the name of Globe Ranunculus, or Globe Crowfoot; and it is the *Lucken gowan* of the Scotch. Thus we have in Allan Ramsay's "Gentle Shepherd:"—

> "We'll pu' the daisies on the green,
> The Lucken gowan frae the bog;
> Between hands now and then we'll lean,
> And sport upon the velvet fog."



"Fog" is the Scottish word for a soft velvet-like moss. Thus the old Scotch proverb records a truth well known to us all, "The rowing stane gathers nae fog."

Our pretty globe flower is paler in colour than the other wild species of ranunculus, and its petals are not glossy like theirs, while the numerous stamens often spread around the centre so as almost to hide the petals. Miller tells us that the globe flowers are gathered in Westmoreland, with great festivity, by youth of both sexes, in the beginning of June, and that it is usual to see them return from the woods of an evening laden with these blossoms, with which they make wreaths and garlands to adorn their houses. If this custom is still in existence, it will probably soon be extinct, for the old floral usages of our country, the flower-strewings, and the well-dressings, and the decking of houses and churches with wreaths, are almost over now; and even the garlands of May-days become fewer every year. The practice of dressing the "shrine where we kneel in prayer" with funeral or wedding chaplets, though one of high antiquity, was early preached against by the Fathers of the Church, as a custom of heathen people; yet in country places it was long continued, and even a century ago these wreaths of flowers were very general. A writer in the *Gentleman's Magazine* of May 1747, treating of flower chaplets placed in churches, says:— "About forty years ago these garlands grew much out of repute, and were thought by many to be a very unbecoming decoration for so sacred a place as the church; and at the repairing and beautifying of several churches where I have been concerned, I was obliged, by order of

the minister and churchwardens, to take the garlands down, and the inhabitants were strictly forbidden to hang up any more for the future." He adds, however, that wreaths of flowers were long after carried at funerals, and placed on the face of the departed friend. That garlands were general on festive occasions our old poets abundantly testify; but after their discontinuance in the churches, their use in every way gradually lessened, till hardly a trace of it remains. Milton, in his Comus, alludes to the ancient use of the chaplet of flowers:—

> "The shepherds at their festivals
> Carol her good deeds loud in rustic lays,
> And throw sweet garland wreaths into the stream,
> Of pansies, pinks, and gaudy daffodils."

This globe flower is our only British species; but various kinds from America, and different countries of Asia, are cultivated in our gardens.

8. Cáltha (Marsh Marigold).

C. palústris (Common Marsh Marigold).—*Stem* erect, rooting or creeping; *leaves* kidney-shaped, their edges with rounded notches, *calyx-leaves* soon falling off. This flower, which is not of the form of a starry marigold, but which resembles a large thick buttercup, is very common on moist pastures and by the sides of streams. It is one of our earliest blooming wild flowers, sometimes gleaming with golden beauty as early as February, and continuing for three or four months. It is the first flower of the meadows in Sweden and Lapland, and in the former country is called *Kalfleka*. It is very abundant

and conspicuous in the northern lands of Europe, and in May gives quite a yellow tint to the fields. The French, who commonly call it *Le souci d'eau*, term it in some provinces *Le populage;* and the Italians give to it the poetic name of *Sposa del sole*. It is common in the moist fields of Germany, where it is known as *Die sump-dotter blume;* and in Spain the peasant calls it *Hierba centella*. In some counties in England its rustic names are Water-dragon, Water-blob, or Horse-blob. Thus Clare says of this flower:—

> "Beneath the shelving bank's retreat,
> The horse-blob swells its golden ball."

Old herbalists tell that the yellow tint of the Spring butter is owing to the cows having fed upon this plant; but it is not wanting in the acridity which characterises ranunculaceous plants in general, and cattle only eat it when urged by hunger. Boerhaave said that it caused so much inflammation to animals eating it, that they rarely escaped death. The young flower-buds, prepared with salt and vinegar, are used instead of capers; and the juice of the flowers, boiled with alum, stains paper of a beautiful, though not a permanent yellow tint. This flower was formerly much used for May garlands, and for forming wreaths to hang about cottage doors. A double variety, often cultivated in gardens, has been found in a wild state on Coldham Common, and in Grandchester Meadow, Cambridgeshire.

9. Helléborus (Hellebore).

1. *H. víridis* (Green Hellebore).—*Stem* few-flowered, leafy; *leaves* digitate; *sepals* spreading. Plant perennial.

This plant is remarkable for the pale green tint of its flowers, which contrast with the rich dark green of its lower leaves. It prefers a chalky soil, and is not uncommon in woods, thickets, and hedges, in some places appearing to be truly wild, but more often the outcast of the garden. No wild flower, save the daisy and the chickweed, blooms so early in the year. Thus a little poem, called the Song of February, says:—

> "The crocus, the snowdrop, the starwort appear;
> The hellebore waited to see me and die,
> And sweet polyanthus peeps up at the sky."

The petals of this flower are, by some botanists, called nectaries; they are tubular, and shorter than the calyx. Bees seem to be fond of the honey contained in them, and flies are often caught by it, and held, as in a trap. This honey is said to be poisonous, and the nature of the plant renders it highly probable. The honey of some plants is well ascertained to be so. Such is the case with the dew-like drops which hang in the Crown Imperial, or which glisten on the flower of the Rhododendron.

2. *H. fœtidus* (Stinking Hellebore).—*Stem* many-flowered, leafy; *leaves* pedate; *sepals* converging. Plant perennial. This plant is often cultivated in shrubberies for its early flowers, which appear in February or March. It is also found in pastures and thickets, though rarely, if ever, truly wild. It is about two feet high, with very bushy evergreen leaves, which are not divided to the centre, and flowers of pale green, tipped with purple. Bishop Mant well describes it:—



"Within the moist and shady glade
What plant, in suit of green array'd,
All heedless of the winter cold,
Inhabits? Foremost to unfold,
Though half-conceal'd, its bloom globose,
Whose petals green, o'er-lapp'd, and close,
Present each arch'd converging lip,
Embroider'd with a purple tip;
And green its floral leaves expand,
With fingers like a mermaid's hand."

This Hellebore is very fœtid and poisonous. Its dried leaves are sometimes given as medicine by country people, but great risk attends their use. The powdered roots mixed with meal are said to destroy mice.

This flower has the old names of Setter-wort, Ox-heal, and Bear's-foot. The Christmas rose of the garden, whose clear white flowers bloom in the coldest season, is the *Helleborus niger*, the word *niger* alluding to its black roots.

10. Aquilégia (Columbine).

1. *A. vulgaris* (Common Columbine).—Spur of the *petals* incurved; *stem* leafy, many-flowered; *leaves* nearly smooth; *styles* as long as the stamens. Plant perennial. "The wood-walks blue with columbines," are not to be seen in every part of our country. The flower, however, grows abundantly in many woods; and though doubtless often the outcast of a neighbouring garden, appears in some places to be truly wild. Professor Hooker says, it is perhaps wild in Hamphsire; and there are woods in Kent in which it is apparently so; and this is the more likely, as the columbine is not so readily dispersed

as some other flowers, and sometimes covers in great profusion banks exposed to the violent action of winds, yet never spreads itself over the neighbouring fields. In Devonshire the columbine is undoubtedly wild, in many places growing in great profusion, with blue, white, and pink flowers. It is an old border flower, and various species have been brought from other lands. Some handsome kinds are introduced from Siberia, and some from the woods of Canada, where they abound and are extremely beautiful. Many of our old poets refer to this flower. Brown, in his Pastorals, names it while describing old floral customs long since discontinued, and known only by the poet's mention :—

"So did the maidens with their various flowers
Deck up their windows, and make neat their bowers,
Using such cunning, as they did dispose
The ruddy piny with the lighter rose,
The monk's-hood with the bugloss, and entwine
The white, the blue, the flesh-like columbine,
With pinks, sweetwilliams; that far off the eye
Could not the manner of their mixture spy;
Then with the flowers they most of all did prize,
With all their skill, and in most curious wise,
On tufts of herbs or rushes would they frame
A dainty border round the shepherd's name,
Or posies make, so quaint, so apt, so rare,
As if the Muses only livèd there."

The columbine is a well-known flower all over Europe, and in most countries of North America. Bryant speaks of it in the American woods, where

"The columbine, in purple drest
Nods o'er the ground-bird's hidden nest."

The French term this flower *L'Ancolie;* and it is *Der Ackeley* of the Germans. The Italians call it *Acquilezia;* and another of their names, *Perfetto Amore* (True Love), seems to imply that it is a favourite flower. The Spaniards call the plant *Pijarilla,* and its old English name of Columbine was given from the resemblance of the blossom to a nest of doves. It flowers in June and July; and in spring its delicate leaves, half unfolded, tinged with pink, and wearing a grey-green bloom on their surface, are very pretty. The plant was formerly used medicinally, but it is by no means a safe medicine, and Linnæus says that children have died from taking it.

Michael Drayton introduces this flower in one of his poems:—

"Make her a goodly chaplet of azured cullambine,
And wreath about her coronet with sweetest eglantine,
Bedeck our Beta all with lilies,
And the daintie daffadillies,
With roses damaske, white and red, and fairest flower-de-lice,
With cowslips of Jerusalem, and cloves of Paradise."

Chapman, however, alludes to some idea respecting the flower which is now unremembered:—

"What's that?—a columbine?
No; that thankless flower grows not in my garden."

11. Delphínium (Larkspur).

1. *D. Consólida* (Field Larkspur).—*Stem* erect, branched; *flowers* in loose racemes; *petals* combined; inner spur of one piece. Plant perennial. This flower is a doubtful native, though often growing in sandy or

chalky fields. Professor Hendon remarks that, about Cambridge, at Quy, the hills are quite blue with it; and adds, that it also occurs with red, pink, and white flowers. It blossoms in June and July. It was formerly regarded as a most powerful vulnerary, and hence its specific name, from *consolidare*, to unite. Other praises it had too, in former days; for Gerarde says of it, "The seed is good against the stinging of scorpions; and its vertues are so forcible, that if the herbe only be thrown before the scorpion or any venemous beast, it causeth them to be without force or strength, insomuch that they cannot stir or move, until the herbe be taken away." Our old herbalist, however, does not pretend to have witnessed its powers, but judiciously prefaces his account with "It is said." In his time the flower was called Knight's-spur and Lark-heel. The French term it *Pied d'Alouette*, as well as *La Dauphinelle;* the Germans, *Der Rittersporn;* and the Italians and Spaniards have also a reference to its spurred petals in their familiar names. Thus the former people call it *Speronella*, and the latter *Espuela de Caballero*. We have several garden larkspurs, which are showy annuals, in their double and semi-double varieties of blue and pink and purple and white blossoms, but which are never of any shade of yellow.

12. Aconítum (Monk's-hood).

1. *A. Napéllus.*—Upper *sepal* arched at the back; *spur* of the nectary nearly conical; *leaves* stalked and 3-ternate; *leaflets* ovate, deeply cut and serrated. Plant

perennial. There are some doubts as to whether this plant is truly wild, but it is to be found in places far from houses or gardens, and has at any rate been naturalized for some centuries. The author has received it from a lonely place in the Forest of Dean, in Gloucestershire; and it is found, though rarely, by the sides of streams and in woods. It grows in several places in Devonshire, and is described as flourishing in some profusion in a small meadow on the margin of a limpid stream near Ogwell Mill. It appears truly wild by the side of the river Teme, in Herefordshire, and on some watery grounds in Somersetshire, near Wivelscomb. The plant is very conspicuous from its size, being often three or four feet high; the stem clothed with very minute hairs, and the dark-purple flowers appearing in June and July. It is very common in gardens, but should not be planted in those to which children have access, as its odour is noxious, and they are likely to select it for their play, on account of the fancied resemblance which the nectaries and side petals bear to a chariot drawn by doves. Some persons in delicate health have been injured by even smelling the flower in the open air; and others, on touching the eyelids after handling it, have experienced considerable pain and inflammation. Even the pollen of the stamens, if blown into the eyes, causes a dangerous affection. The root is most powerfully poisonous. A fatal instance occurred in the present year, 1853, in consequence of but a small quantity having been eaten in mistake for horseradish. Several well-authenticated cases are on record of people who, mistaking the plant for Masterwort, have eaten it, and died in

consequence. The stems and fresh leaves have also proved fatal, or caused mental derangement. In one case, in which a man became maniacal through eating it, the surgeon who attended him declared that the malady was not caused by the plant, and insisting on eating some leaves in proof of his assertion, died in extreme agony. This case is recorded by Moræus; but a man of science ought to have known that the plant was deleterious, for the ancients had recorded it as amongst the most deadly poisons. One of its common English names alluded to its powerful effects on the wolf; and its dim lurid purple would at once excite the suspicion of a botanist. It is well known that wolves and other wild animals have been killed by arrows dipped in the juice of aconite.

This plant blossoms in June and July. It had the old names of Helmet-flower and Friar's-cap; and the Dutch call it *Monnikskapper*, the Germans *Der Sturmhut*. It has been used with much success as a medicine, and its virtues been greatly eulogised by Dr. Stoerck, a German physician. Linnæus, who mentions that criminals were formerly put to death by small doses of aconite, says, that though it is fatal to kine and goats if they eat it in a fresh state, yet that it is taken by horses without injury when dried.

13. Actæa (Bane-berry).

1. *A. spicáta* (Bane-berry).—*Raceme* of flowers long; *petals* as long as the stamens; *leaves* stalked, 3-ternate; *leaflets* ovate, deeply cut and serrated. Plant perennial. This rare plant, which has hitherto been found chiefly



in Yorkshire, grows in bushy tracts on a limestone soil. It is stated to have been found near Ambleside and Sandwick, Ulleswater, in Westmoreland. The stem is one or two feet high; and both leaves and berries much resemble those of the elder-tree. The flowers are white, and open in May and June. The plant has also the name of Herb Christopher, and the name used by the Dutch has, too, a reference to this saint,—they term it *Kristoffelkruid.* In France it is known as *L'Actée;* and the Germans call it *Schwarzwurz.* The berries, which are poisonous, yield, when mingled with alum, a good black dye. The tubers of an American species are considered an efficacious remedy for the wound inflicted by the bite of the rattlesnake; hence that plant is one of several which are known in America as the Rattlesnake-Herb. The bane-berry is not attractive enough to find a frequent place in the garden.

14. Pæónia (Peony).

1. *P. corallína* (Entire-leaved Peony).—*Leaves* twice-ternate, glabrous, their segments ovate, entire. Plant perennial. This plant ought, perhaps, hardly to be considered a wild flower, for it grows but in two places in this country, and was probably planted in both. The rock of Steep Holms, an island in the Severn, has long been noted as one of its habitats; and Sir William Hooker records Blaize Castle, near Bristol, as another. Gerarde says that in his days it grew near Gravesend; but it is impossible now to determine whether the plant was a native of this country and has become eradicated

from our wild flora, as some plants appear to have been, or whether it was introduced from gardens. The Rev. W. Lisle Bowles has some beautiful lines on this lonely peony :—

"This, abrupt and high,
And desolate, and cold, and bleak, uplifts
Its barren brow! Barren, but on its steep
One native flower is seen, the peony,
One flower, which smiles in sunshine and in storm,
There still companionless, but yet not sad;
She has no sister of the summer field,
None to rejoice with her when spring returns;
None, that in sympathy may bend its head,
When evening winds blow hollow o'er the rock
In autumn's gloom! So Virtue, a fair flower,
Blooms on the rock of Care, and, though unseen,
So smiles in cold seclusion, while remote
From the world's flaunting fellowship, it wears,
Like hermit Piety, one smile of peace,
In sickness and in health, in joy or tears,
In summer days or cold adversity;
And still it feels heaven's breath reviving steal
On its lone breast, feels the warm blessedness
Of heaven's own light about it, though its leaves
Are wet with evening tears."

The seeds of this plant are said to be ground and used in tea by the Daurians and Mongols, who also boil the roots in broth; but it is probable that the more slender species, *Pæonia edulis*, is that which they thus use. Our wild peony has red, pale pink, or white flowers, which appear in June and July. It differs from the common magnificent garden species, *Pæonia officinalis*, in its uncut leaves; those of the garden peony being divided into lobes: the blossom is also single. The pæonies introduced from other lands are

very ornamental, and some have much excited the attention of florists. The double red, which was brought from Switzerland to Antwerp at the end of the sixteenth century, sold for twelve crowns a plant; and we have only to look back a few years, to the time when the Moutan-tree Peony was too expensive a flower for any but the rich man's garden. This is now comparatively a common plant, and is a truly beautiful species. Fortune, in his "Wanderings in China," describes his anxiety to procure some new varieties of this kind. Those already in England were either rose-coloured or white; and it was asserted by the Chinese near Shanghae, that varieties of the peony were to be found of purple, blue, and yellow tints. Our traveller scarcely believed this, but a Chinese artist assured him that he had seen flowers of these colours, and for a small sum made a drawing of them from memory. These drawings were taken to the owner of a flower-shop, who said that he must send for them to a distance of a hundred miles, and must charge the purchaser a high price. In due time the peonies made their appearance; and though the blue was wanting, and the yellow flower had that tinge only in the centre of its white petals, yet there were beautiful lilac and purple blossoms. Mr. Fortune, however, had scarcely paid the high price when he found that the Chinese flower-seller had actually procured them at about a mile from the town.

The Greek legends told that the physician Pæon cured Pluto of a wound with the common peony, and it is called after Pæon in almost every country in Europe. Our old poets called it the Piny or Piony.

The ancient Greeks seem to have held the plant in great repute: among other superstitious notions, they believed it to be of divine origin, and an emanation from the moon; they added that it shone during night, but its splendour is not so visible to modern eye. No wonder that such a plant was reputed to drive away evil spirits, to avert tempests, and by growing near houses to protect them from all injury. Nor were all the absurd notions respecting the peony confined to the ancients. In our own days anodyne necklaces are worn by children in villages, which are believed to aid dentition, and to prevent convulsions; and the beads are turned of the roots of one or other of the common peonies.

Order II. BERBERIDEÆ—THE BARBERRY TRIBE.

Sepals from 3 to 6 in a double row, often coloured, soon falling off, surrounded by petal-like bracts; *petals* either of the same number as the sepals, and opposite to them, or twice as many, often with a gland at the base; *stamens* of the same number as the petals, and opposite to them; *anthers*, 2-celled, and opening by a valve from the base upwards; *ovary* solitary, 1-celled, 1—3 seeded; *fruit* usually a berry. Shrubs, often bearing spines; or herbs, growing chiefly in temperate climates, often on mountainous regions.

1. Bérberis (Barberry).—*Sepals* 6; *petals* 6, with two glands at the base of each, within; *stamens* 6; *berry*



2-seeded. Name supposed to be from *berbérys*, which is the Arabic name for the fruit.

2. Epimédium (Barrenwort).—*Sepals* 4; *petals* 4, with a scale at the base of each, within; *pod* many-seeded. Name of doubtful origin.

1. Bérberis (Barberry).

1. *B. vulgáris* (Common Barberry).—*Racemes* drooping; *spines* 3-cleft; *leaves* inversely egg-shaped, serrated, and hedged with minute hairs. Plant perennial. This shrub when covered with its bright-red drooping clusters of fruit is very handsome, and often planted in gardens; nor is it uncommon in a wild state in woods and coppices, and on calcareous hills. It sometimes grows on old walls, as on those of Godstone Nunnery; and sometimes on the banks of rivers, as on the borders of the Avon. The shrub is from three to six or eight feet in height, and the foliage has somewhat of a sea-green hue; the bark is of light colour, and the flowers, which are in pendulous clusters, are yellow, and appear on the shrub in June.

This plant was in former days called the Pipperidge-bush. The modern German name, *Der Sauerdorn*, is very expressive, for the foliage is slightly acid, and the fruit most powerfully so. The French call the plant, *L'épine vinette;* the Italians, *Crespino;* and the Russians, by the name of *Barbariss*. The inner bark of the stem infused in beer is said to cure jaundice; and the boiled roots dye wool of a good yellow. The bark is so astringent as to be commonly used by the Poles in

tanning leather; and they also dye this material of a beautiful yellow, by mingling some other ingredients with the bark. The fruits are so sour that birds leave their rich red clusters untouched; but the acid, which is of the nature of oxalic acid, renders the barberry, when crushed in water, a pleasant and cooling drink in fevers; and it is also made into a good jelly. This fruit is used too by confectioners, for various sweetmeats, and makes an elegant garnish for dishes. The Egyptians consider it a valuable remedy in pestilential fevers, when macerated in fennel-water. The fruits of some Asiatic species are dried in the sun, like raisins.

The berries of our common barberry are usually scarlet, but they are sometimes purple or pale yellow. The scent of the flowers, when borne to us by the winds from the distant shrub, is very fragrant, but it is disagreeable when too near. Insects of various kinds seem particularly partial to these blossoms, which are remarkable for the irritability of their stamens. Linnæus first recorded a fact now well known to botanists, and easily observed on any summer's day, that when bees, in search of honey, touch the filaments, the anthers quickly turn inwards, and discharge the pollen. The same effect is instantly produced by touching them with the sharp point of a needle, and is seen, not only in our native species, but in several others.

Dr. Gordon, of Hull, in one of his Lectures, thus remarks on the irritability of the stamens of the barberry: "The contractile effect in this case, as far as I have observed, is always much greater than the amount of the cause by which it is produced; and in

experiments I have witnessed, that relaxation will take place, at the same time that the mechanical cause which excited the contraction continues to be impressed. Moreover, the stamen of the barberry can be made to contract even after it is cut from the flower, precisely in the same manner as the heart can be excited to action after it has been removed from the body."

There was formerly a strong prejudice amongst farmers against the barberry shrub, because it was considered to injure the crops of wheat, even at the distance of a hundred yards from the spot. A small parasitical fungus, common on the foliage of the shrub, the *Æcidium Berberidis*, was supposed to generate the dust which, carried from it by the winds, originated the minute fungus that causes the rust on wheat. This opinion must be erroneous, because the rust on corn is caused by the growth of *Puccinia graminis*, which is a totally different plant from the fungus on the barberry. There is, however, another parasitic plant, still more frequent than this on the shrub, and called the Barberry Mildew (*Erisiphe Berberidis*). The leaves are sometimes entirely covered with the thin white substance of this parasite, which is seen by the microscope to consist of very delicate forked filaments, with minute dark-coloured globular bodies interspersed among them; and some good botanists have hesitated as to whether this may not have been communicated to the corn-field; though it is more probable that the circumstances of the situation, or soil, or season, might alike favour the growth of the fungus tribe on both plants. That the barberry is not necessarily injurious to the wheat-field is proved by

a communication sent by the well-known botanist, Mr. Charles Babington, to the "Magazine of Natural History." This gentleman says, "As illustrative of the inaccuracy of this idea, a friend of mine residing at Bath mentioned to me, that during the last autumn, when walking round some corn-lands belonging to one of his relatives, who lives in Wiltshire, his attention was particularly called to the very heavy crop in one of the fields, in the hedge adjoining which, he, at the same time, observed *Bérberis vulgáris* in plenty. His relative was fully impressed with the idea of the destructiveness of Berberis, and not being a botanist, did not know that it grew there. I may add that the wheat from that field, on being thrashed, completely answered the expectations raised by its fine appearance."

Our common barberry is wild in most European countries. Mr. Lyell, in his "Visit to the United States," remarks of this plant on the banks of the Piscataqua: "The barberry also, though not indigenous, is very abundant and ornamental in the woods here. It has overrun, in modern times, the shores of New England, and made its way many miles inland, to the great annoyance of the agriculturists. Some naturalists wonder how it can spread so fast, as the American birds, like the European ones, refuse to feed on its rich berries; but if it be true that cattle, sheep, and goats occasionally browse upon this shrub, there is no mystery as to the mode of its migration." Sheep are said to be very fond of it in this country.

Some very handsome species of barberry, now called *Mahónia*, have been introduced from abroad into our

gardens; and none of them is more ornamental than the fine hardy evergreen shrub called the Nepal Barberry.

2. Epimédium alpínum (Alpine Barrenwort).

Root-*leaves* none; stem-*leaf* twice ternate; *leaflets* heart-shaped, serrated, and hairy beneath; *nectary* yellowish, resembling an inflated membrane. Plant perennial. This elegant little Alpine plant is by no means frequent, and it is doubtful whether it be truly indigenous. It grows in some mountainous woods in Scotland and the north of England. Each stem bears a single delicate leaf; and in May its panicle of flowers is of a pale-yellow colour. Professor Hooker and Dr. Arnold mention, that when seen under a microscope, the anthers of this plant exhibit a singular structure, being formed of two valves, which on opening spring upwards, and suffer the pollen to escape. The French term this plant *Le Chapeau d'Evêque;* and in other countries besides it has received a name from the fancied resemblance which its petals bear to a clerical hat,—for the Germans call it *Bischofsmitre.* It is the *Mulljesbloem* of the Dutch, and the *Epimedio* of the Italians and Spaniards; while this, or a similar species, is known to the Japanese by the name of *Ikaniso.* It has been found in Bingley Woods in Yorkshire, about Glasgow and Edinburgh, and on Carrock Fell and Skiddaw, Cumberland.

Order III. NYMPHÆACEÆ—WATER LILY TRIBE.

Sepals 4—6, gradually passing into *petals*, and then into *stamens*, all being inserted on a fleshy disk, which surrounds the ovary; *stigma* sessile, rayed; *berry* many-celled, many-seeded. Aquatic herbaceous plants, remarkable for their large and beautiful flowers, which are in tropical lands very fragrant, and of brilliant tints. They have large, floating, peltate, or heart-shaped leaves. Several have nutritious roots, which are eaten either roasted or boiled; and their seeds contain a large quantity of starch. That celebrated plant, which has recently occupied so much attention, and been so successfully cultivated at Chatsworth—the *Victoria Regina*—is not only the largest of water-lilies, but the largest aquatic plant known, and a vegetable wonder. Mr. Schomburgk, who first discovered it on the Berbice, thus characteristically describes it: "A gigantic leaf, from five to six feet in diameter, salver-shaped, with a broad rim, of a light green above, and a vivid crimson below, rested upon the water; quite in character with the wonderful leaf was the luxuriant flower, consisting of many hundred petals, passing in alternate tints from pure white to rose and pink. The smooth water was covered with them; I rowed from one to another, and observed always something to admire. The leaf on its surface is of a bright green; in form, orbicular, with this exception,—opposite its axis it is slightly bent in. Around the margin extended a rim, about three to five inches high,



on the inside light green, on the outer part bright crimson." The upper portion of the stem is an inch thick, and is studded with sharp prickles about three-quarters of an inch in length, and the blossoms fifteen inches in diameter. But it is not the tropical waters only which have the beautiful lilies—the Lotus flowers—for some of the species are found in temperate, and even cold climates, some of the *Nymphææ* lying in abundance and beauty on the surface of the crystal lakes in Norway. The roots of *Nymphæa Lotus* are very much prized as food; and the *Victoria Regína* has been called the Water Maize, from its nutritious and prolific seeds. The East Indian *Nelumbium*, which abounds in all the hotter countries of the East, and with which the ditches about Pekin are literally choked, is thought to have been the Sacred Bean of Pythagoras, which was the object of religious veneration in Egypt, and which the priests were commanded not to look upon. Its singular seed-vessels, in whose cells lie the bean-like seeds, are thought to have originated the Cornucopia of the ancients.

1. NYMPHÆA (Water-Lily).—*Sepals* 4; *petals* inserted on a fleshy disk. Name from its growing in places supposed to be the haunts of the Nymphs or Naiads.

2. NUPHAR (Yellow Water-Lily).—*Sepals* 5; *petals* inserted on the receptacle. Name of Greek origin.

1. *N. alba* (Great Water-Lily).—*Leaves* cordate, entire; *stigma* of 16 ascending rays. Plant perennial. The waters which run their silvery course through our meadows, or lie in quiet lakes amid their greenness,

bear some of the loveliest of our native flowers. Those who have marked the rich vegetation of tropical countries, tell us that nowhere are they so much reminded of their luxuriance as when they gaze on a stream with its margin decked with tall blossoms, and its little islets of emerald grass and glowing wild-flowers. Beautiful as are many of our aquatics, yet this lily, with its rose-like sculptured cup of alabaster lying among its glossy bright-green leaves, is without gainsay queen of the waters.

Except in the order termed Compound Flowers, we have besides this scarcely any plants which can be said to bear a double or semi-double blossom; a circumstance which renders the wild-flower nosegay far less durable than that gathered from the garden; yet while the blossoms are often on this account less showy, their consequent lightness contributes to the grace of their attitudes, and of the motion communicated to them by the passing winds. But our water-lily, with its numerous pure white petals, looks like the flower of some warmer region, and has been justly said to vie in beauty with the Magnolia of India, though its fragrance is but faint in comparison with the odour of that plant. Some of our quiet secluded streams are one mass of white and green, in June and July. The author has seen large pieces of water in Essex almost covered with the lilies; but, as Baxter remarks, the flower is seen nowhere in greater perfection than in the vicinity of Oxford, where it grows over the surface of almost every pond, deep watery ditch, and slow river. The Ouse yet bears its rich masses of the flower, as it did when Cowper wandered by its side, and, wishing for the lily, had his

longing gratified by the affectionate instinct of his spaniel. The spot where "Beau" dashed into the stream to seize the flower is still pointed out. It is close by a bridge called Goosey Bridge, and beautiful water-lilies lie there on their broad leaves as of yore. The gentle poet has long since quitted the scene which his humble piety adorned; but both verse and flower remain to remind us of his simple tastes and pleasures, and of his pure and elevated feelings, when, years ago,—

"The noon was shady, and soft airs
Swept Ouse's silent tide;
And, 'scaped from literary cares,
He wander'd by its side.

"It was the time when Ouse display'd
His lilies newly blown;
Their beauties he intent survey'd,
And one he wish'd his own."

The Cherwell has long been celebrated for its water-lilies, and Mr. Noel, in his beautiful little poem, entitled "A Thames Voyage," thus refers to them:—

"And in bays where matted foliage weaves
A shadowy arch on high,
Serene on broad and bronze-like leaves
The virgin lilies lie.

"Fair fall those bonny flowers! oh how
I love their petals bright!
Smoother than Ariel's moonlit brow,
The water-nymph's delight!

"Those milk-white cups with a golden core,
Like marble lamps that throw
So soft a light on the bordering shore,
And the waves that round them flow."

The "waves" of the poet must be only tiny wavelets, however, for the water-lilies would not flourish where the river was rapid. The blossoms are said by most botanists to close and sink beneath the surface in the evening and night. They are certainly fully open only during day; but their folded flowers still gleam in white contrast to their leaves, like alabaster vases, on the surface of the stream, long after it has begun to glisten beneath the silver rays of the moon.

The large leaves of the water-lilies evolve oxygen gas copiously, and the flowers emit a slight odour. Some foreign species are far more powerfully scented; and Mr. Gardiner, when in Brazil, saw two white water-lilies on a lake, one of which was deliciously fragrant, while the other had the scent of coal-tar.

The root-stocks of this plant are said by Fée to be better than oak-galls for dyeing grey; and they have also been employed with advantage in tanning leather. These roots, which have a very bitter and astringent flavour, are used both in Ireland and the Scottish Highlands to dye dark-brown or chestnut colour; and both root and leaf were formerly employed in medicine. Kine refuse to eat the plant, but it is said to be readily devoured by swine, who tear up the water lilies in the most destructive manner to get at the roots. This flower is sometimes called Water Rose; and well deserves the name given by the Hindoos to an Indian lily—the Delight of the Waters. The French call it *Le Nenuphar;* the Germans, *Die Seeblume;* and in Holland, where the water-lily is plentiful, it is called *Plomper.* The water-lilies of India, and also of Africa

and America, are many of them of a rich rose colour, and others vary in all the shades of light-blue to white. The roots are chewed by singers in India, to clear the voice. In Japan, where the white water-lily is an emblem of purity, artificial lilies, cut out of white paper, are carried at funerals on long poles before the departed, and flowers are gathered from the stream and placed on the face. The people of Greece and Turkey make a pleasant drink from the blossoms. A variety of the common water-lily is occasionally found with small flowers.

2. Nuphar (Yellow Water-Lily).

1. *N. lútea* (Common Yellow Water-Lily).—*Stigma* with 14—20 rays, which do not extend to the margin; *leaves* cordate. Plant perennial. Not nearly so beautiful as the white species, but far more common, is the Yellow Water-Lily, which has a very thick cup-like blossom. It floats during June and July on many of our streams, ponds, and rivers; but it is so succulent that it is impossible to dry it for the herbarium so as to retain anything of its original appearance. It has a strong odour, too powerful for a room, but pleasant enough when borne on the winds with the fragrance of the mint, and the delicate scent of the green herbage; and we have sometimes thought it delicious as we have sate by the stream where were abundance of

> "The water-lilies, whose broad leaves
> Make green and sunny islets in the pool,
> For golden flies on summer days to haunt,
> Safe from the lightning-seizure of the trout;

Or yield their laps to catch the minnow springing
Clear from the stream, to 'scape the ruffian pike,
That prowls in disappointed rage beneath,
And wonders where the little wretch found refuge."

There is a strong scent of brandy in the flower, and this, as well as the shape of its seed-vessels, has led to its familiar name of Brandy-bottle; while the leaves, which when half-unfolded are rolled into green slender vase-like forms, have procured for it the name of Water-can. The Turks and Arabs are very fond of the water-lilies, and deck the festive table with their flowers. They also make a pleasant liquor from them, which they call Pufer, a corruption probably of the old Arabic name of the flower, Noufar; and when the Arab raises the Pufer-vase to his lips, his companions say to him, "May it benefit thee!" while he in return exclaims, "Praise be to God!" and passing the liquor onwards, adds, "May God benefit thee!"

The glossy leaves, over which the water runs as over oiled cloth, are said to be styptic. The thick and succulent stems are bitter and astringent; the whole plant contains a quantity of starch; and the seeds, which taste like those of the poppy, are eaten by the natives of many countries in which these lilies grow, and are often partaken by travellers who share in Eastern hospitality. The root-stocks of several of the water-lilies are highly esteemed by the negroes of Senegal, who roast and eat them like potatoes; and in India the farinaceous seeds are sometimes boiled, or are roasted in heated sand, or they are eaten raw like millet. The roots of the yellow species are in Sweden, during seasons of scarcity, pounded into cakes, along with the inner bark of the Scotch fir.

The Yellow Water-Lily is a native of almost all parts of Europe, as well as of America and many parts of Asia. Linnæus says that the flowers, as well as roots, are eaten by swine, though refused by most animals. He also adds that cockroaches are destroyed by the roots, bruised and mingled with milk, and that a similar preparation will kill crickets. The old proverbs, however, so current in villages, which tell of evils impending over him who kills either a robin or a cricket, are a great protection both to the bird and to the merry insect; and the shrill chirping is rather endured by the superstitious than the threatened calamity, though sometimes the sound is so loud as to prevent conversation.

2. *N. púmila* (Least Water-Lily).—*Stigma* of 8—10 rays, which extend beyond the margin; *leaves* cordate. Plant perennial. This lesser lily, which blossoms in July and August, varies little from the last-named species, though smaller in size. It is doubtful if it is essentially distinct from it, the most marked difference being in the toothed edge of the stigma. It grows in several of the Highland lakes; at Mugdock, near Glasgow; and Chartner's Lough, Northumberland.

Order IV. PAPAVERACEÆ.—THE POPPY TRIBE.

Sepals 2, soon falling off; *petals* 4; *ovary* 1. *Stigma* rayed, or lobed; *capsule* 1-celled, many-seeded; *seeds* inserted on incomplete partitions, which radiate from the sides of the seed-vessel, but do not meet at the

centre. Herbaceous plants, many of which are the pest of the corn-fields, and have been disseminated with grain all over the world. They all possess, in a greater or less degree, a narcotic principle, which renders some very valuable as medicines; and the seeds of all the British species contain a mild and wholesome oil.

1. Papáver (Poppy).—*Stigma* sessile, rayed; *capsule* opening by pores beneath the stigma. Name from Papa, the Celtic word for pap, because given to infants with their food as a narcotic.

2. Meconópsis (Welsh Poppy).—*Style* short; *stigma* of few rays; *capsule* opening by pores below the style. Name from the Greek words signifying poppy, and a resemblance.

3. Glaúcium (Horned Poppy).—*Stigma* 2-lobed; *capsule* pod-like, 2-celled, 2-valved. Named from the glaucous or sea-green hue of its foliage.

4. Chelidónium (Celandine).—*Stigma* 2-lobed; *capsule* pod-like, 1-celled, 2-valved; *seeds* crested. Named from *Chélidon*, a swallow; probably because it flowers at the time of the coming of that bird.

1. Papáver (Poppy).

* *Capsules bristly.*

1. *P. Argemone* (Long Rough-headed Poppy).—*Capsule* club-shaped; *bristles* erect; *stem* leafy; *leaves* twice pinnatifid. Plant annual. This is a common flower in our corn-fields, during June and July; and though neither so large nor so richly-coloured as the common



scarlet poppy, is a conspicuous object among corn. The petals are of somewhat pale scarlet, with a black spot at their base. The name of Argemóne, from *argos*, slothful, was formerly given on account of the narcotic effect of the poppy; and there is still a genus called by that name, though we have no British species belonging to it. Our Rough-headed Poppy has the narcotic principle in its capsules; and Burnett says, that even the foliage partakes of it in some degree, and that it is sometimes boiled and eaten. The Mexican Argemóne, which is an allied plant, is called by the Spaniards *Fico del Inferno*, on account of its powerfully narcotic effects, and the prickly capsule, which renders it so troublesome a weed; and they use it as a cure for ophthalmia, and extract from its seeds an oil, with which they polish their furniture. It is used by the native doctors of India as a substitute for ipecacuanha.

Our readers unaccustomed to botanical investigations, but who often see the countless thousands of brilliant poppies colouring the fields, would be surprised to find that they are not truly indigenous to our soil. There is not a doubt that we owe many of our apparently wild flowers to the cultivation of the land, since we find them only on cultivated spots; and that if the land were long left neglected, they would gradually disappear from it. "When," says Professor Henslow, "I mention our common field poppies as not exempted from all suspicion of an exotic origin, it will be supposed that I am stating an extreme case; and yet I question whether some, if not all the species of the genus Papaver (of Decandolle) would not ultimately disappear from our native flora,

if the whole kingdom were abandoned to the uncultivated state from which it has been reclaimed for so many generations. I scarcely remember to have seen a specimen of a true Papaver in an uncultivated district, unless *P. Argemóne* be an exception." Several of our poppies have followed the Englishman in colonization, and their scarlet flowers wave above the fields of Australian corn, and are as unwelcome to the agriculturists in that land as in ours.

2. *P. hybridum* (Round Rough-headed Poppy).—*Capsule* nearly globose; *bristles* spreading; *leaves* twice pinnatifid. Plant annual. This plant is by no means frequent, but is found on some chalky or sandy cornfields, in June and July. Its flower is of deep scarlet. It is more often seen in the southern counties of England than in any other part of the United Kingdom.

** *Capsules smooth.*

3. *P. dúbium* (Long Smooth-headed Poppy).—*Capsule* oblong; *bristles* on the flower-stalks, closely pressed to them; *leaves* sessile, and once or twice pinnatifid. Plant annual. This scarlet flower is not unfrequent in corn-fields during June and July. It is very handsome, though its broad petals are of paler scarlet than those of the common red poppy, and the blossom is not so large.

4. *P. Rhœas* (Common Red Poppy).—*Capsules* nearly globose; *bristles* spreading; *leaves* pinnatifid, cut. Plant annual. The farmer cannot praise our common poppy, but the lover of beauty rejoices in its grace, and in the richness of scarlet tint which harmonises so well



with the verdure around it. A black spot often stains the base of its petals, and its foliage is of bright green. Country people call the plant Corn-rose, or Red-weed, or Headache, and Cheese-bowl; the French term it *Le Pavot, L'Œillette,* and *Le Coquelicot.* It is *Der Mohn* of the German farmer, and the *Maankop* of the Dutch; while this, or some similar species, is the *Papavero* of the Italian, and the *Adormidera* of the Spaniard. Though so common in England, it is rare in the West of Scotland. It is easily distinguished from the long smooth-headed species, which often grows with it, both by its short capsule, and by the spreading hairs of its flower-stalks. Agnes Strickland enumerates it among her "Flowers of the Corn-field:"—

"And we'll pause and gather a glorious wreath
From the flowers that are shelter'd the corn beneath:
There are velvet campions, both white and red,
And poppies, like morning-glories spread,
That flash and glance with their scarlet sheen,
The bending ears of the wheat between;
And mark, when it bows to the breeze's sway,
How it shows the cockle in rich array,
And the lowly bind, with its delicate tinge,
And the azure succory's silken fringe;
The modest scabious, of meeker blue,
And silvery galium, of virgin hue;
The gay fluellin, and ox-eye bold,
And their gaudy neighbour, the marygold."

This poppy is cultivated in France and Germany for its oily seeds, which are not narcotic, but are consumed very generally on the Continent instead of olive oil. Its use was, at one time, prohibited by the laws of France,

much popular and unreasonable clamour having been excited against it; but it is now openly sold, and is often mixed with olive oil. The seeds are also used in Poland and Russia as an ingredient in soups and gruel. It was called *Rhœas*, from the Greek word "to flow," or "fall," in allusion to the fugacious nature of its petals. Cybele, the mother of the gods, wore a crown of the poppies, its numerous seeds being an emblem of fertility. Brantz Mayer mentions a singular usage connected with the poppy among the Indian population which pours into Mexico from the Lake. "Scarcely an afternoon passes in Lent that the observer will not find the canal covered with gay boat-loads of Indians, passing homewards from market, dancing, singing, strumming the guitar, and crowned with wreaths of poppies." "I do not," he adds, "know the origin of the custom of wearing this forgetful flower, but it is both a healthier and more poetic oblivion than that resorted to by many people of other lands after a day of toil."

5. *P. somniferum* (White Poppy).—*Capsule* nearly globose; whole plant smooth, and of sea-green tint; *leaves* clasping the stem. Plant annual. The solitary white poppy, standing here and there among the green blades of corn in July and August, is a very beautiful flower. Sometimes it is of most snowy whiteness, with a deep purple spot at the base of its petals; at other times the whole flower has a delicate or a deeper tinge of lilac. But it is when cultivated in fields that its beauty is most remarkable, for there, nodding to the summer winds, the large flowers look like balls of down waving up and down in graceful motion. There is

reason to doubt if this flower is ever truly wild, for although it is apparently so in some parts of England, yet it has probably been introduced with the grain into the cultured field. Plentiful as it is in the wild spots of Southern Europe, yet in all probability it is not indigenous even to that soil, but was brought thither from Asia. It was early cultivated in Greece, at first for the sake of its seeds, which were used as food, and which in modern times are much employed in Eastern confectionery and sprinkled over cakes. It was also cultivated in early days very generally in the states of Europe, and now it is a beautiful garden flower, for the parterre displays a great variety of rich and delicate tints, while its petals still preserve the thin and fragile and crumpled character of the poppies in general. Ancient Latin sages tell how it grew in the Roman garden of Tarquinius Superbus, and served the haughty monarch as an emblem by which to shadow forth his coming tyranny. Charlemagne thought it worthy a place in his Capitularies; and the god of slumber was early figured as reclining on the mass of its snowy flowers, and holding them in his motionless hand. Since those days how many thousands have been influenced by the juice of the poppy! Some lulled to the refreshing slumber in which pain was for awhile soothed or forgotten; some given up to those wild visions and restless agitations, which have ended by paralysing alike all bodily powers and moral energies!

The fields of white poppy which occasionally ornament our own landscapes are chiefly planted either for the sake of the capsules—which are a valuable external remedy in cases of pain,—or for the seeds, which,

though they are wanting in the nareotic principle possessed by the capsule, yet yield an excellent mild oil, sometimes used to adulterate that of the olive. It is said that as good an opium may be procured from the poppy in England as from that grown in warmer regions, but the expense of its eulture here renders it more eostly than that produeed from Turkey or India. All parts of the plant contain a white, opaque, narcotie juice, but this abounds espeeially in the capsules. These, being the parts for which our poppy is cultivated in England, are gathered as soon as ripe, and brought to market in bags, chiefly from parts of Surrey and Kent.

In warm climates this white juiee is in far greater abundance, and the whole plant attains a greater luxurianee. When grown for opium, incisions are made in the capsules of the poppy, when about half ripe, and the juice thickens in the night to a firm grey substance. The mode in which opium is now gathered in the East is precisely the same as that described so many eenturies since by Dioscorides. Incisions are made, at sunset, and the dews of night favour the exudation of the milky substanee, which is scraped off on the following morning by women and children. After being thickened by stirring in the sun, it is shaped by the hand into eakes. In the opium shops of Constantinople it is mixed with rich syrups made of various fruits, in order to render it a sweetmeat; or it is formed into small lozenges, on which are impressed the words "Mash Allah,"—the work of God. The Tartar couriers, who travel immense distances with astonishing rapidity, often take no other nourishment than a few of these small lozenges. The

celebrated Maslach, or Mash Allah, of the Turks, is believed, however, to contain other narcotic substances besides the opium, and the juice of the hemp is probably mingled with it. Of the uses of opium to the sufferer from pain and restlessness we need not speak. Many who have ministered by the couch of pain have blessed God for its soothing influences; and all who are familiar with the records of Eastern travel know how often that blessing is perverted into a curse, when the continued use of opium has weakened the limbs and shortened the life of man, and degraded an intellectual being to the state of imbecility.

2. Meconópsis (Welsh Poppy).

1. *M. Cámbrica* (Yellow Welsh Poppy).—*Capsule* smooth; *leaves* mostly stalked, pinnate; the *leaflets* pinnatifid. Plant perennial. This poppy opens its large yellow blossoms to the sunshine of June and July, but it is a rare flower. It grows on rocks, or in shady places; and sometimes enlivens some crag or heap of stony fragments in Westmoreland or Devonshire. It is found on the Cheddar rocks, with some other rare flowers, which the wild winds have carried thither. It is easily known from most of our poppy tribe by its golden petals; the Horned Poppy alone of our British species sharing this colour with it. It is much more slender than that plant, however, and much more in form resembling our scarlet field poppies, and its foliage is of a rich grass-green. It abounds in a yellow juice.

3. Glaúcium (Horned Poppy).

1. *G. lúteum* (Yellow Horned Poppy).—*Leaves* very rough, embracing the stem, waved, and of pale sea-green hue; *pod* roughish, with minute tubercles, cylindrical, and from 6 to 10 inches long. Plant biennial. Our sea-beaches have mostly a barren aspect, for flowers and trees are scarce upon them. Here and there a little patch of green enlivens them, or a wild flower springs up among them, but these are few and far between. The Yellow Horned Poppy is decidedly their greatest floral ornament; and it grows so near to the sea, that in winter the high waves almost reach its clumps of evergreen foliage, and little balls of snowy spray linger among the leaves. From June to August its yellow blossoms quiver before the breezes, from stony beach, or sand-hill or cliff, or whatever soil forms the ocean's margin, unless it be the salt marsh. Few objects are more beautiful on an early summer morning, when all the minute points of its rough leaves are beset with the pearls of dew, and the sickle-like pod waves above the newly-expanding blossom. According to the Greek mythology, Glaucus was the name of a fisherman who leaped into the sea, and "by transmutation strange," became a sea-god. Hence, too, the word "glaucous," which is commonly used by botanists to express the pale sea-green colour of the foliage of many plants growing near the sea, and the pale-green powder with which they are covered, as is the plum with its bloom. Agnes Strickland has described some of the flowers which deck the verge of the ocean:—

"The wild sea-cliff, though rude it be,
Is wreath'd with many a flower,
That blossoms there unscathed and free,
Through storm and shower.

"There bright as gems of fairy lore,
Or Eastern poet's dream,
The horned poppies gild the shore
With sunny gleam.

"The red bind to the barren soil
Clings safe 'mid all alarms,
While drowning seamen faintly toil
With fainting arms."

Older poets told, too, of the Horned Poppy, and the powers which the superstitious believed it to possess. Ben Jonson, in the Witches' Song, says,—

"Yes, I have bought to help our vows
Horned poppy, cypress boughs,
The fig-tree wild that grows on tombs,
And juice that from the larch-tree comes."

The light of Revelation, which has dawned now on every British village, and brought its teachings to hall and cottage, has dispelled fancies and practices which were sanctioned in other times, and none dream now of gathering the poppy for incantations. It is very acrid in its nature, and was formerly used as a medicine in various disorders. It has a dark-yellow spindle-shaped root, like a small carrot in appearance, but having no resemblance to it in its mild and nutritious qualities; and it is said, if eaten, to occasion madness.

2. *G. phœníceum* (Scarlet Horned Poppy).—*Pod* hairy; stem-*leaves* deeply pinnatifid and cut; *stem* hairy. Plant annual. This flower, which has the long pods that led

him who first named the genus to designate it Horned, is in blossom in June and July. It is a showy scarlet flower, with a black spot at the base of its petals, and is a doubtful native, but has been found in some fields of Norfolk and in Portland Island.

3. *G. violáceum* (Violet-coloured Horned Poppy).—*Pod* erect and three-valved, hairy near the summit; *leaves* rough with bristly hairs thrice pinnatifid, the segments linear. This flower is easily known from all our other wild poppies by its violet-blue petals. It is a very lovely but a very rare plant, occurring in some corn-fields, in Norfolk and Cambridgeshire, in May and June. This poppy is so nearly allied to the genera *Chelidonium* and *Papaver*, that it has by various botanists been classed in one of these. Recent writers, as Sir William Hooker and Dr. Arnott, make it a distinct genus, and call it *Roeméria*, which is the name given to it by Decandolle. J. J. Roemer, after whom it was called, was a Professor of Botany at Landshut, and assisted Schultz in an edition of the "Species Plantarum of Wildenow:" he died in 1820.

4. Chelidonium (Celandine).

1. *C. majus.*—*Pod* linear, one-celled, and two-valved *leaves* pinnate, with about five leaflets, which are broadly ovate, lobed, and cut and notched at the edges with rounded notches. Plant perennial. This plant has no affinity to the Lesser Celandine, which, as we have stated before, is a species of ranunculus. It is very common on old walls, among ruins, and waste places; and is one

of the herbs which follow man, and are more often found near his dwellings than in secluded places. It is about two feet high, slightly hairy, its foliage of bluish green, and its flowers, which are of a dull-ochre yellow, appear in April, and are in blossom till October. They are smaller than any other of the poppy tribe. The stems are brittle, and full of a thick yellow juice, which is used in villages as a cure for warts. It is of very acrid properties, and is a violent poison, though Dr. Withering remarked of it, that a medicine of so much activity would some day be converted to important uses. It is now employed by oculists very successfully in operations on the cornea, and has long been known in villages as a remedy, when diluted with milk, against thick spots in the eye. Pliny, whose large book of wonders is called by Mr. D'Israeli, an "awful repository of all the errors of antiquity," has recorded the discovery of the virtues of this plant, which he says was made by the swallows, who anointed the eyes of their young ones with its juices. Our great naturalist, John Ray, however, who rejected the absurd notions about plants so prevalent in his time, even among scientific men, yet thought very highly of this mighty tome of the great Roman naturalist, and considered it as a vast treasury of learning. Although we cannot give credit to the science of the swallow, yet from earliest ages this orange juice of the Celandine was applied both to eyes and heads as a remedy; hence the flower is called by the old herbalists both Swallow-wort and Tetter-wort; and most of the continental names refer to the swallow. The plant is *La Chélidoine* of the French, *Das Schölkraut* of

the Germans, the *Schelkruid* of the Dutch, and the *Svaleurt* of the Danes; while both the Spaniards and Italians term it *Celidonia*. According to Loureiro, its juice is greatly esteemed by the natives of Cochin-China, as a medicine for a variety of maladies.

Order V. FUMARIACEÆ—THE FUMITORY TRIBE.

Sepals 2, deciduous; *petals* 4, irregular, and more or less united and swollen or spurred at the base; *stamens* 6, in two bundles; *ovary* 1-celled; *style* thread-like; *stigma* lobed; *seed-vessel* 1 or 2-seeded; *seeds* shining, crested. Herbaceous plants, closely allied to the poppies, but having a watery and not milky juice. They are scentless and slightly bitter. They are found chiefly in the temperate latitudes of the northern hemisphere, in thickets and waste places. Two are found at the Cape of Good Hope.

1. Corýdalis.—*Petals* 4, one of which is spurred at the base; *seed-vessel* many-seeded. Name, the Greek word for Fumitory.

2. Fumaria (Fumitory).—*Petals* 4, more or less united, one of them swollen at the base; *seed-vessel* 1-seeded. Name from *fumus*, smoke.

1. Corydalis.

1. *C. claviculáta* (White Climbing-Corýdalis).—*Stem* much branched, climbing; *leaves* pinnate: *leaflets* ellip-



tical and entire, the leaf-stalk terminating in tendrils. Plant annual. This plant, which is found in some shrubby and bushy places in England where the soil is stony or gravelly, is very abundant in Scotland, and especially in the Highlands, where it grows on old walls or on the roofs of cottages, among stonecrops, houseleeks, the short brownish-green cushion moss, and the scaly crusts of the lichen called the orange parmelia. The Corýdalis is long and straggling, very delicate in texture and appearance; and its flowers, which are pale yellow, almost white, bloom in June and August in small clusters. When growing among the underwood, its tendrils enable it to climb to a distance of some feet. Several species of Corýdalis are favourite garden flowers, and they have mostly yellow or purple blossoms. They are easily cultivated, and are pretty ornaments of rock-work. Some of the most elegant of the genus grow wild in North America.

2. *C. sólida* (Solid-rooted Corýdalis).—*Stem* erect, and without branches or tendrils; a *scale* beneath the lower leaf. *Leaves* 3—4, twice ternate, their leaflets wedge-shaped or oblong, and cut; root solid and tuberous. Plant annual. The flowers of this species are purple, and very much larger than those of the white flowered Corýdalis. The plant blossoms in May and June, and is sometimes admitted into the garden. It is doubtful, indeed, if it is truly wild, as many of the habitats recorded for it are spots on which gardens were once cultivated, and where still "many a garden flower runs wild." Sir William Hooker and Dr. Arnott think it may be wild at Wickham, in Hampshire. Its foliage

is of bluish green, and its roots abound in starch, which is used by the Kalmucs for their winter food.

3. *C. lútea* (Yellow Corýdalis).—*Stem* angular, erect; *leaves* twice pinnate; *leaflets* broadly wedge-shaped, and cut, or 3-cleft; *braets* very small; *pods* nearly cylindrical, and very short. Like the solid-rooted species, this plant is destitute of tendrils. Its flowers are of a bright yellow, appearing in May and June. This species is not uncommon on old walls, sometimes flourishing there in great abundance; but there is no reason to believe it is an indigenous plant, though, from its frequent occurrence without culture, it is generally enumerated among the plants of our British Flora.

2. Fumaria (Fumitory).

1. *F. capreolata* (Ramping Fumitory).—*Sepals* as broad as the corolla, and half as long; *fruit* globose, notched; *leaves* twice pinnate; *leaflets* flat. Plant annual. This species, which is very common in hedges, gardens, and by road-sides, is so variable, that it is often very difficult of discrimination by the unpractised botanist. Sir William Hooker observes, that it is best distinguished by its calyx leaves, and its large petals. He remarks, that "in the south of Europe, the fruit-bearing flower-stalks are usually remarkably recurved; in Germany, and the south of England, they are only arched backwards; and in Wales and Scotland they are often straight and spreading." Other changes in the appearance of the plant occur also according to the soil on which it is found. It generally climbs by means of its

footstalks. It is in blossom very early in the year, and during May it grows beside the lovely flowers, some of them so full of the sweet scents,—

> "Which zephyr, in his wanton play,
> Scatters in spring's triumphant way,
> Of primrose pale, and violet,
> And young anemone, beset
> By thousand spikes of every hue,
> Purple and scarlet, white and blue;
> And every breeze that sweeps the earth,
> Brings the sweet sound of love and mirth;
> The shrilly pipe of things unseen
> That pitter on the meadow green;
> The linnet's love-sick melody;
> The laverock's carol, loud and high;
> And mellow'd, as from distance borne,
> The music of the shepherd's horn."

The flower is in bloom until August; it is pale pink, tipped with purple, and, in some cases, cream-coloured.

The old English name of Earth-smoke, given indiscriminately to several of the species, has its French synonym of *Fume de Terre*, while the Italians call the plant *Fummosterno*. It is *Der Erdrauch* of the Germans, the *Duivekervel* of the Dutch, and the *Palomilla* of the Spaniard. The Fumitory and the Fumaria of the botanist alike indicate, with most of the continental names, its connexion with smoke; some say, because it covers the earth like smoke; others, because it affects the eyes like smoke. Some detect in it a smoky odour, not perceptible to the author; but the reason given by the Rev. C. A. Johns, in his "Flowers of the Field," is doubtless the true one. "Its name," this gentleman

says, "from *fumus*, smoke, was given because the smoke of this plant was said by the ancient exorcists to have the power of expelling evil spirits," when men believed in "herbes of vertue," and called in their aid to—

> "Chase evil spirits away by dint
> Of sickle, horseshoe, hollow flint."

The author has inquired in vain in many villages for any trace of old superstitious customs connected with the Fumitory, but could find none, though they probably exist in Northamptonshire, as Clare says—

> "And Fumitory, too, a name
> Which superstition holds to Fame."

This, and other species, are, however, still used in milk as a cosmetic, and probably are not without efficacy in removing freckles, and the brown tint given by exposure to the sun. Shakspeare alludes to the Fumitory as a sign of a neglected soil:—

> "Her fallow leas
> The darnel, hemlock and rank fumitory
> Doth root upon; while that the coulter rests
> That should deracinate such savagery.
> The even mead that erst brought sweetly forth
> The freckled cowslip, burnet, and sweet clover,
> Wanting the scythe all uncorrupted rank."

2. *F. officinális* (Common Fumitory).—*Sepals* narrower than the corolla, acute, sharply toothed; *fruit* nearly globose, terminating abruptly; *leaflets* narrow, usually channelled. Plant annual. Common as this plant is in dry fields and on road-sides, and intruding

itself unbidden into the garden, yet it is not indigenous to our soil, though now one of its commonest weeds. In the days of Conrad Gesner, it was rare in the fields of Southern Europe, and supposed to come from the East; now, it grows not only in England, but is wild in the corn-fields of most continental countries, from Greece to Lapland. The flowers are smaller than those of the species last described; they are rose-coloured, and tipped with purple; and children, in many parts of Kent, call them wax dolls. The plant is in flower nearly all the summer; and even as early as May the field of young green corn is often reddened by its numbers. It was formerly much used as a tonic medicine; and Thunberg mentions that in Japan it is employed medicinally.

3. *F. parviflóra* (Least-flowered Fumitory).—*Sepals* very minute; *fruit* globose, slightly pointed, or blunt; *leaflets* linear, channelled. Plant annual. This plant is found in corn-fields but rarely, flowering from June to September. Wouldham, near Rochester, the neighbourhood of Epsom, and the Calton Hill, Edinburgh, are named by Sir William Hooker and Dr. Arnott as the places of its growth. It has rose-coloured blossoms, but a variety occurs in which the flower is white, tipped with purple.

4. *F. micrántha* (Small-flowered Fumitory).—*Sepals* somewhat cordate at the base, deeply toothed at the margin, concave at the back, shorter and broader than the corolla. Segments of the leaves narrow and channelled. Plant annual. A small plant, blooming from June to August, in waste places; very rare in England,

though found in several spots in the east of Scotland. Many varieties of the last two species are described, but most botanists consider that both of these small-flowered kinds of Fumitory are but varieties of the commoner and larger kinds.

Order VI. CRUCIFERÆ.—THE CRUCIFEROUS TRIBE.

The crosswise arrangement of the petals at once distinguishes the cruciform plants, instances of which blossoms are very familiar in the Wallflower, Stock, and other wild and garden plants. The *petals* are invariably four in number, and the *stamens* six, of which two opposite ones are shorter than the other four. The *seed-vessel* is either a long *silique*, composed of two valves and a central partition; or it is a shorter pod, termed a silicle, or pouch, which is generally, but not invariably, similarly formed. Two green glands are usually present at the base of the stamens, and secrete honey. The plants are either annual, biennial, or perennial; herbs, occasionally becoming, as in the Wallflower, a sort of under shrub, but rarely exceeding three feet in height.

The Cruciferous Order furnishes us with many of the vegetables which constitute our food. The Turnip, Cabbage, Radish, Horse-radish, and a variety of other important plants, have cruciform blossoms. Most vegetables of this order contain, when wild, an acrid, volatile, oily principle, which is peculiarly abundant in the

seeds of the Mustard and the roots of the Horse-radish, and which occurs in a milder form in the foliage of the Watercress, the Scurvy-grass, and other edible plants. The cruciform plants also contain a quantity of nitrogen gas, which is the cause of the unpleasant odour emitted by them in decaying. It has been observed that cruciform plants are always eatable when their texture is succulent and watery, as in the leaves of the cabbage, and the roots of the turnip and radish. None are unwholesome, though some, like the Wallflower, are too acrid to be palatable. Many very beautiful garden flowers are contained in this order. The fragrant Stock and Wallflower, the Candy-tufts, the Rockets and Alyssums, are found in almost every garden; and the pretty Cuckoo-flower, the Cardamine of the meadow, and the yellow Cherlock of the fields, are only a few of the many which blossom in our wild landscape.

The chief generic mark of this order is founded on the position of the radicle or embryo roots with regard to the cotyledons or seed-lobes; but as this arrangement is too difficult to be comprehended by any but the scientific botanist, it is not alluded to in a work intended for popular use.

The Cruciform Order is pre-eminently European, occurring mostly in the temperate regions of Europe and Asia. Upwards of 200 grow in the frigid zone, the scanty vegetation being chiefly composed of these plants. Some of them thrive at the limits of the perpetual snows of lofty mountains, and others follow man into whatever region he may penetrate.

* *Seed-vessel, a pouch* (silicle) *or short pod.*

† *Pouch 2-valved, with a central vertical partition.*

1. Thlá'spi (Penny-cress).—*Pouch* rounded, flat, notched; *valves* boat-shaped, winged at the back; *seeds* many. Name from the Greek *thlao*, to flatten.

2. Capsélla (Shepherd's Purse).—*Pouch* inversely heart-shaped, flat; *valves* boat-shaped, keeled, but not winged; *seeds* numerous. Name, a small *capsa*, or seed-case.

3. Hutchínsia.—*Pouch* elliptical, entire; *valves* boat-shaped, keeled, not winged; *cells* 2-seeded. Named from Miss Hutchins, of Bantry, Ireland, an eminent botanist.

4. Teesdália.—*Pouch* roundish, notched; *valves* boat-shaped, keeled; *cells* 2-seeded; *stamens* having a small scale at the base of each, within. Named in honour of Mr. Teesdale, of Yorkshire.

5. Lepídium (Pepper-wort).—*Pouch* roundish; *valves* keeled; *cells* 1-seeded; *petals* equal. Name from the Greek *lépis*, a scale, from the shape of the pouches.

6. Ibéris (Candy-tuft).—*Pouch* blunt; *valves* keeled and winged; *cells* 1-seeded; *petals* unequal. Name from *Iberia*, Spain, where many species grow wild.

7. Cochleária (Scurvy-grass).—*Pouch* globose, or nearly so; *valves* not flattened; *seeds* numerous. Name from *cochlear*, a spoon, from the shape of the leaves.

8. Subulária (Awl-wort.)—*Pouch* oval; *valves* flattened, boat-shaped; *seeds* numerous. Name from *súbula*, an awl, from the shape of the leaves.

9. Drába (Whitlow-grass.)—*Pouch* oval, or oblong;

valves slightly convex; *seeds* many, in two rows. Name from the Greek *drabé*, acrid.

10. Camelína.—*Pouch* oval; *valves* inflated, with a prominent nerve at the base; *cells* many-seeded. Name from *chamæ linum*, dwarf flax.

11. Kóniga.—*Pouch* oval; *valves* flattened; *cells* 1-seeded. Name in honour of Mr. König, of the British Museum.

†† *Pouch without a central vertical partition; or 1-celled. and* 1-*seeded.*

12. Cakílé (Sea-Rocket).—*Pouch*, angular, with a horizontal joint; lower division containing a pendent seed, the upper an erect seed, soon falling off. Name of Arabic origin.

13. Crambé (Sea-Kale).—*Pouch* 2-jointed; *upper cell* containing one pendent seed, which is supported on a stalk springing from the base of the cell; lower joint seedless. Name from the Greek *crambé*, a cabbage.

14. Corónopus (Wart-cress).—*Pouch* 2-lobed, rough, not bursting; *cells* 1-seeded. Name from the Greek *coroné*, a crow, and *pous*, a foot, from the shape of the leaves.

15. Isátis.—*Pouch* flattened, 1-celled, 1-seeded; *valves* keeled. Name from the Greek *isazo*, to render equal, because supposed to destroy all roughnesses of the skin.

* * *Seed-vessel a* silique, *or long pod.*

† *Pod opening by two valves.*

16. Dentária (Coral-root).—*Pod* narrow, pointed; *valves* flat, nerveless; *seeds* in a single row, on broad

stalks. Name, *dens*, tooth, from the teeth-like divisions of the root.

17. Cardamíne (Bitter Cress).—*Pod* linear; *valves* flat and nerveless, separating with an elastic spring; seeds in a single row, on thread-like stalks. Name from the Greek *cardia*, the heart, and *damao*, to fortify, from its supposed strengthening properties.

18. A'rabis (Rock Cress).—*Pod* linear; *valves* flat, nerved or veined; *stigma* nearly sessile, obtuse; *seeds* in a single row. Name, from being originally an Arabian genus.

19. Turrítis (Tower Mustard).—*Pod* linear, 2-edged; *valves* prominently nerved; *seeds* in two rows. Name from *turris*, a tower, from its place of growth, or from its towering form.

20. Barbaréa (Winter Cress).—*Pod* linear, 4-angled; *valves* with prominent nerve; *seeds* in a single row; *calyx* erect. Name from St. Barbara, to whom it was anciently dedicated.

21. Nastúrtium (Cress).—*Pod* short, nearly cylindrical; *valves* convex, nerveless; *seeds* irregularly placed in two rows; *calyx* spreading. Name from *nasus tortus*, a distorted nose, on account of the pungent properties.

22. Sisýmbrium (Hedge Mustard).—*Pod* rounded or angular; *valves* convex, with three nerves; *stigma* entire; *seeds* in a single row. Name, the Greek name of the plant.

23. Erýsimum (Treacle Mustard).—*Pod* 4-sided; *valves* keeled; *stigma* obtuse, entire or notched; *seeds* without margins, in a single row. Name from the Greek *eruo*, to cure.



24. Chéiranthus (Wall-Flower).—*Pod* flattened; *valves* with a prominent nerve; *stigma* of two spreading lobes; *calyx* erect, two opposite sepals swollen at the base. Name probably of Arabic origin.

25. Matthíola (Stock).—*Pod* cylindrical, or flattened; *stigma* of two converging lobes; *seeds* generally with a membranous wing. Name, in honour of the Italian botanist, Dr. Matthiolus.

26. Brássica (Cabbage).—*Pod* nearly cylindrical, beaked; *valves* 1-nerved; *seeds* globose, in a single row; *calyx* erect. Name from the Celtic *bresic*, a cabbage.

27. Sinápis (Mustard).—*Pod* nearly cylindrical, tapering; *valves* with 3 or 5 nerves: *seeds* globose, generally in a single row; *calyx* spreading. Name from the Greek *sinapi*, mustard.

28. Hésperis (Dame's Violet).—*Pod* 4-sided or 2-edged; *stigma* nearly sessile; *calyx* erect. Named from *Hesperos*, the evening; at which time the flowers yield a powerful fragrance.

†† *Pod without valves.*

29. Ráphanus (Radish).—*Pod* swollen, imperfectly jointed, tapering; *seeds* globular; *calyx* spreading. Name in Greek signifying its early appearance, or quick growth.

1. Thlá'spi (Penny-cress).

1. *T. arvénse* (Mithridate Mustard, or Penny-cress).—*Pouch* round and flat, with a broad wing around it, and a deep notch; *seeds* striated; *leaves* oblong, arrow-

shaped at the base, smooth and toothed. Plant annual. This cress has a very singular appearance in autumn, when the flowers are dead, and its large flat seed-vessels stand around the upper part of its stem. These seed-vessels are about the size of silver pennies, hence its English name; and Pliny mentions that it is from them that the whole genus was called *Thlapsi;* he adds that they are like lentils. When rubbed, this plant has a faint odour of garlic; and Sir J. E. Smith remarks, that it was formerly used in the Mithridate confection, "an elaborate hodge-podge now laid aside." This plant is in blossom all the summer on waste ground, or in cultivated fields, but it is of local occurrence. The flowers are small and white, and grow in little clusters.

2. *T. perfoliátum* (Perfoliate Penny-cress).—*Pouch* inversely heart-shaped, and surrounded by a wing; *style* shorter than the notch of the pouch; *seeds* smooth, three or four in a cell; *stem-leaves* oblong, heart-shaped at the base. Plant annual. This is a much rarer plant than the last, growing only on limestone pastures in Oxfordshire and Gloucestershire. A few years since only one British habitat was recorded; this was among the old stone-pits about Burford, in Oxfordshire; but perhaps the botanists who sought it were too eager in their desire to possess specimens of so rare a plant, and eradicated it, for it can now be seldom found there. This is too often the case with rare plants, which are sometimes gathered with a selfish inconsideration for other botanists, and hence many persons are unwilling to make known the place of growth of any peculiarly interesting plant. The Perfoliate Penny-cress is now found in great abundance in the

stony valleys of the Cotswolds; and Sir William Hooker and Dr. Arnott mention as habitats, Bourton, Upper Slaughter, and Naunton-Seven-Springs, near Stow-on-the-Wold, Gloucestershire; besides Burford, in Oxfordshire, and the stone walls about Kineton, in Warwickshire. Baxter says that sheep are peculiarly fond of this plant, while they never touch the Whitlow-grass (*Draba verna*), which grows in the same place. He adds, that in a field, where there was one day a great quantity of the Perfoliate Cress, it was, by the next day, entirely cropped off by the sheep which had been turned into the pasture. Even when left untouched this plant is but of short duration, as it flowers at a very early period, and soon runs to seed; so that before summer heat sets in, it has entirely disappeared. Its foliage is of glaucous green; and it is in bloom early in April and throughout May. It is a native also of France, Italy, Spain, Germany, and Greece.

3. *T. alpéstre* (Alpine Penny Cress).—*Pouch* inversely heart-shaped, abrupt, entirely surrounded by a wing; *style* longer than the notch of the pouch; *seeds* numerous; *stem-leaves* arrow-shaped at the base; *stem* simple. Plant perennial. This plant, which shows its small white flowers during June and July, is very rare, and grows only on mountainous pastures in the north of England.

2. Capsélla (Shepherd's Purse).

1. *C. Bursa-pastóris* (Common Shepherd's Purse).—Whole plant more or less hairy; *stem-leaves* oblong, toothed, and arrow-shaped at the base; *root-leaves* pin-

natifid. Plant annual. This plant was formerly included in the genus *Thlaspi*, but has been separated from it because of the absence of the winged valves which are found in the pouches of that genus. The Shepherd's Purse must be known to all, for it grows in fields, on hedge-banks, on beaches, on cliffs, by the city pavement, and on the garden bed or neglected gravel path. It varies much in size, sometimes being only two or three inches high, and at others coming up on pastures in most unwelcome luxuriance, and attaining the height of one or even two feet, well deserving its common name of Pickpocket, by the room which it occupies on valuable land. Its flowers are very small and white, and grow in little clusters, blooming all the summer. Its numerous flat seed-pouches characterise the plant; and they are sufficiently like a rustic flat leather purse to have obtained for it not only its English name, but the synonyms by which it is known in country places almost throughout Europe. The French call it *Bourse de Pasteur*; the Spanish, *Bolsa de Pastor*. It grows abundantly about the ruins of the ancient city, and the Roman peasant calls it, too, Borsa de Pastor. It is *Die Hirtentasche* of the Germans; and the *Herders-taschjis* of the Dutch. It was known to our forefathers by the names of St. James's Weed, and Poor Man's Parmacetie; the latter alluding to the medicinal virtues which Lightfoot says were formerly thought "good" for external and internal maladies of man or beast. It was in those days boiled and eaten as greens, and is still sold in the markets of some North American cities. The plant is truly cosmopolite; and the traveller when he sees little

else to remind him of his native soil, can generally find the Shepherd's Purse. Fortune, in his "Wanderings in China," thus remarks of the vegetables which crowd the stands in front of the shops of Shanghae. "Besides the more common kinds," he says, "the Shepherd's Purse and a species of Trefoil, or clover, are used among the natives here; and really these things, when properly cooked, particularly the latter, are not bad." As to the remedial virtues of the plant, we know of none in modern days, except the antiscorbutic properties which this contains in common with all the cruciform plants, though in less degree than many. The old herbalists certainly, however, discovered many hidden virtues in vegetables; and though they had various fanciful notions respecting them, yet they were right in their opinions concerning some which are now altogether disused and overlooked. They were often very patient investigators, though few perhaps were so diligent in making experiments as was Conrad Gesner, who used to eat small portions of wild herbs, and to test personally their effects on the system, by sitting down to his study with their leaves or flowers bound about him, to see how they would affect his constitution. By these means he accumulated a number of isolated facts, which botanists in later days have been able to generalize.

3. Hutchínsia (Hutchinsia).

1. *H. petræa* (Rock Hutchinsia).—*Leaves* pinnate, entire; *petals* scarcely longer than the calyx; *pouch* blunt at both extremities; *stigma* sessile. Plant annual. This is a pretty delicate little plant, from two to four

inches high, which in March and April has small clusters of minute white flowers. It grows on limestone rocks in several parts of England and Wales, and has been found on the wall of Eltham Church, in Kent, though probably introduced there. A few alpine and rock species, from Germany and the South of Europe, are occasionally planted in our gardens; they have all white flowers, and are elegant, but not conspicuous plants.

4. Teesdália.

1. *T. nudicaúlis* (Naked-stalked Teesdalia).—*Petals* unequal; *leaves* almost all growing around the root, pinnatifid. Plant annual. This rare little plant has small corymbs of white flowers in May; and the leaves form a circle around the root, and are closely pressed to the ground. It grows on dry banks. Mr. Robert Teesdale, after whom it was named, was the author of a Catalogue of the Plants growing about Castle Howard, in the North Riding of Yorkshire, which was published in the "Transactions of the Linnæan Society."

5. Lepídium (Pepper-Wort).

1. *L. latifólium.*—*Leaves* egg-shaped, pointed, simple, smooth; *pouch* oval entire. Plant perennial. The names of this and of some other plants remind us of the days when culinary vegetables were little cultivated, and when condiments were expensive; of days when Lamb's Lettuce, and Sauce alone, and Poor Man's Pepper, were welcome additions to the diet. When pepper was so dear, that



to promise a saint yearly a pound of it was a liberal bequest, no wonder that the economical housewife, or the poor one, seasoned her dishes with the pungent leaves of some wild herb, and gave to it the name of Poor Man's Pepper. The young leaves are still sometimes eaten in salad, but their pungency is almost too powerful to be agreeable, though there is no doubt that they were well liked in former times. As Beckmann remarks, "Some plants, both indigenous and foreign, which were formerly raised by art, and used at the table, are no longer cultivated, because we have become acquainted with others more beneficial. Many of them served our forefathers in the room of foreign spices, to the use of which trading companies have accustomed us, much to their advantage, and our hurt." It is true, also, that many have been banished by fashion, which rules with universal sway, and commands the taste as well as the smell, to consider as intolerable, articles to which our ancestors had a peculiar attachment. The root of the plant was formerly used instead of Horseradish. It is very large and creeping, and very acrid in flavour. The foliage is of a dull bluish green colour, and its small white flowers, which open in July, grow in crowded leafy clusters. It is found in salt marshes, and on the sea-coast, but is not frequent. Several species which grow wild in other lands are used as food; and the garden cress, which most of us have, during childhood, cherished on some tiny square of earth, and which will grow even on moistened flannel, is the *Lepidium sativum* of the botanist. One of the species common in New Zealand, *Lepidium oleraceum*,

is a powerful antiscorbutic, and, in times before our naval crews were furnished with lime-juice, was of essential service to mariners landing there, as it was very beneficial in the complaints induced by salt provisions. This species has the flavour of lettuce. Another kind is very serviceable to the Sandwich Islander, as it inebriates fish, and enables him to capture them readily. The French call our broad-leaved species *La passerage*. It is *Die Kresse* of the Germans, the *Pepper Kruid* of the Dutch, and the *Lepidio* of the Italian and Spaniard.

2. *L. ruderále* (Narrow-leaved Pepperwort).—*Leaves* smooth; *lower ones* pinnatifid and toothed; *upper ones* linear and entire; *petals* wanting; *stamens* 2. Plant annual. This cress, which flowers in June, in waste places near the sea, is much smaller than the preceding kind. It has a stem about a foot high, much branched, and a great number of seed-vessels.

3. *L. campestré* (Field Pepperwort).—*Leaves* downy; *upper ones* arrow-shaped at the base; *pouch* rough, with minute scales; *style* scarcely longer than the notch. Plant annual. This is more frequent than either of the former species. It occurs in corn-fields on dry gravelly soils. It has an erect stem, from ten to twelve inches in height, and its white flowers bloom from June to August.

4. *L. Smíthii* (Hairy Pepperwort).—*Leaves* downy; *upper ones* arrow-shaped at the base; *pouch* not scaly; *style* much longer than the notch. Plant perennial. This, as well as the Field Pepperwort, is frequent. It is a greyish downy plant, with small white flowers, and numerous seed-vessels. It grows in abundance in hedges



about Belfast and Dublin, and is common in the North of Scotland, and in some counties in England. It is much like the Field Pepper, though truly distinct.

6. Ibéris (Candy-tuft).

1. *I. amára* (Bitter Candy-tuft).—*Leaves* lanceolate, acute, somewhat toothed, smooth; *pouch* round, with a narrow notch. Plant annual. We are far more familiar with the Candy-tuft as a garden than a wild flower, and its white and rich purple blossoms are very ornamental to the border. Our wild kind has less pretensions to beauty, but it has thick clusters of white blossoms, and its stems are about a foot high, spreading around the root. It grows, though rarely, on chalky fields, but is thought to be either the outcast of gardens, or to have been introduced with grain from the south of Europe. It is not unfrequent in Oxfordshire and Berkshire, and the author once saw a quantity of it in a field about three miles from Royston, in Cambridgeshire, far from any houses, and apparently wild. The whole plant is very bitter, and it is antiscorbutic. It is sometimes called Clown's Mustard. It is a native of Europe, from Portugal to Germany, and from England to Italy. The Dutch call it *Bitter Scheefbloem;* the Spaniard, *Carraspique*. It is *L'Iberide* of the French, and *Die Iberpflanze* of the Germans.

7. Cochleária (Scurvy-grass).

1. *C. officinális* (Common Scurvy-grass).—*Pouch* nearly globose; *root-leaves* between heart-shaped and kidney-shaped, stalked; *stem-leaves* oblong, sessile,

slightly lobed, toothed at the base, stem often much branched. Plant annual. The English name of this genus indicates the medicinal properties of the plants composing it. It is of old repute for diet drinks, and is one of the ingredients which formed the "Spring juices" of our forefathers, and which doubtless were beneficial to health. The common species had also, in olden times, the names of Scrubby-grass, and Spoon-wort, and very ample details have been given by medical botanists of its use in stimulating the digestive organs, and in removing cutaneous maladies. The circumstance of its growing near the sea, has long been regarded as a providential adaptation to the needs of the mariner; and many a sailor, or passenger, after a long voyage, may have derived advantage from it in those complaints engendered by salt provisions, and absence of vegetable diet. The town of Barmouth is said to have formerly obtained its celebrity as a resort for invalids, on account of the quantity of scurvy-grass growing in its neighbourhood. This plant blossoms in May. It has rather large corymbs of white flowers, and its succulent leaves, very variable in form, are sometimes hollow like the bowl of a spoon. They were formerly eaten by country people in salads, but they are very pungent. The author has known persons living in villages in Kent, to bruise them with a small quantity of water in a mortar, and take the juice thus expressed, daily, as a spring drink. The plant grows on muddy shores and salt marshes, and on the Highland mountains. A smaller variety, common on these mountains, is regarded by some botanists as a distinct species, and termed

Cochlearia Grœnlandica. The Scurvy-grass is *Das Lösselkraut* of the Germans, the *Lepelkruid* of the Dutch, *Le Cranson* of the French, and the *Skee-wurt* of the Danes.

2. *C. Anglica* (English Scurvy-grass).—*Pouch* elliptical, veined; *root-leaves* stalked, oblong, entire; *stem-leaves* oblong, toothed at the base, sessile. Plant annual. This plant grows on the borders of inland rivers, and in salt marshes. It is more slender than the last-named species, and its seed-vessels and blossoms are larger. Its white flowers appear in May and June. It is found on the banks of the Thames, between London and Woolwich, on the borders of the Avon, near Bristol, and in other similar localities, both in England and Scotland. Many writers think it but a variety of the Common Scurvy-grass, only altered by the circumstances of soil and situation.

3. *C. Dánica* (Danish Scurvy-grass). *Pouch* ovate, veined; *leaves* all stalked, lobed, and nearly triangular. Plant annual. This is as common a species as any, growing about hedges and on cliffs near the sea. It is very much smaller and less robust than *C. officinalis.*

4. *C. Armorácia* (Horseradish).—*Root-leaves* oblong, on long footstalks, the edges with rounded notches; *stem-leaves* long, lanceolate, serrated, or entire; *root* long and tapering; *pouch* shorter than the flower-stalks. Plant perennial. The Horseradish has so long been cultivated as a condiment to the "Roast Beef of old England," that it has become a familiar plant to us, both in gardens, and in many wild places. It grows by rivers, and though often the outcast of gardens, is

considered by the authors of some Floras of the North of England to be truly wild there. It has small white flowers in May and June. It is called on the Continent, *Cran, Cran de Bretagne, Raifort,* and *Reeredyck.*

8. Subularia (Awlwort).

1. *S. aquática* (Water Awlwort).—*Leaves* awl-shaped, few in number, and all springing from the root. This singular little plant is not unfrequent on the sandy or gravelly bottoms of Alpine lakes. The leaves are two or three inches long, the roots white and fibrous, and the small white flowers appear in July. It is a native also of Lapland, Sweden, Norway, Germany, Holland, and other parts of the Continent; and is *La Subulaire* of the French, the *Wasserpfriemen* of the German, and the *Elskruid* of the Dutch; while in Denmark it is known as the *Sylblad,* and in Norway as the *Frytilje.* It is a very curious plant, on account of its sometimes flowering beneath the water. This is contrary to the general habit of water-plants, which almost always rise above the surface of the stream before they expand, in order that fertilization may take place in air. The flowers are, doubtless, often perfected beneath the water; but the Rev. Hugh Davies gives, in the "Welsh Botanology," an account which proves that the Awlwort sometimes expands above the surface. "In the dry summer of 1798," says this gentleman, "as I walked in the bed of a lake, called Llyn Llywenan, in the parish of Bodedern (Anglesea), whence the water had retired about two months before, I unexpectedly discovered this



plant in great abundance. Notwithstanding that its appearance was very different from what I had been used to see in the Arvonian Alpine lakes, where it always blossoms and seeds at the bottom, under water of considerable depth, yet it did not seem to regret the privation; the foliage was spread, the leaves somewhat reclining, and the flowering-stems procumbent; the calyx and corolla were fully expanded; the petals, which are white, and of an obovate form, were horizontal, the seed-vessels and seed quite perfected; and, on the whole, it seemed to indicate a quite different plant."

9. Draba (Whitlow-grass).

1. *D. vérna* (Vernal Whitlow-grass).—*Flower-stalks* leafless; *petals* deeply cleft; *leaves* narrow, pointed, somewhat toothed, hairy. Plant annual. This is well named a vernal flower, and is truly welcome for its early bloom, bringing to remembrance the elegant fancy which Westwood has conceived of the Snowdrop :—

> "It is the herald of the flowers,
> Sent with its small white flag of truce, to plead
> For its beleaguer'd brethren: suppliantly
> It prays stern Winter to withdraw his troop
> Of winds and blustering storms, and having won
> A smile of promise from its pitying foe,
> Returns to tell the issue of its errand
> To the expectant host."

The blossom of the Whitlow-grass would hardly attract the regards of any, save those who truly love wild flowers, for it grows in small clusters, on a stem about two, or, at most, three inches high; though, when growing in

any quantity, it whitens the summit of the wall or dry bank, during February and March. The leaves form a circle around the root, but seldom spread out so far but that a half-crown piece would hide them; and specimens of minute beauty may sometimes be seen, in which flower and foliage too would be enclosed in a circle not larger than a lady's ring. It sometimes peeps up above the snow; and the author has seen its tiny flowers emerging from the white mantle which covered the summits of some of the old walls about Rochester Cathedral. Our fathers used to imagine that when it appeared in any quantity, it foreboded short crops of corn in autumn; an idea, perhaps, not altogether without foundation, because it flourishes best in a rainy season, and such a season helps to fill the cornfield with weeds. The small white flowers of the Whitlow-grass droop during rain. The plant is very acrid, and is found on most of the mountainous countries of Europe. It flourishes at Tunbridge Wells, and many of our dry rocky places. A variety has been found by Sir William Hooker and Dr. Arnott among the shelving rocks at Ben Lawers, which is remarkable for its inflated pouches.

2. *D. aizoïdes* (Yellow Alpine Whitlow-grass.)—*Flower-stalk* leafless, smooth; *petals* notched, twice as long as the calyx; *style* much longer than the stamens; *leaves* narrow, pointed, glossy, keeled, and fringed. Plant perennial. This elegant little plant forms dense tufts on the walls of Pennard Castle, near Swansea. It is rendered conspicuous from afar in March and April, by its flowers of bright yellow, which, though very small, are very abundant, and on stalks about two inches high.

3. *D. incána* (Twisted Whitlow-grass).—*Stem-leaves* narrow, toothed; *petals* entire; *pouch* twisted. Plant biennial. The leaves of this species distinguish it from the common kind, for they are quite white with down. It is also much taller, sometimes attaining a foot in height, and though not a common plant, yet is less rare than several of the species, growing on mountain-rocks in Wales, the north of England, and in Scotland, and bearing white flowers in June or July. Several of our British species are also annual or perennial plants of the cold mountainous countries of Europe, and a few are natives of America. The French call the Whitlow-grass *La Drane;* the Germans term it *Hungerblümchen;* and the Dutch *Tasch Kruid.* Its continental name of Hunger-flower, given, probably, on account of the barren soils on which the different species flourish, seems very general. Thus the Swedes call it also *Hunger-blomster*, and the Danes *Hungerblomst.* The name of Whitlow-grass, as well as that of Nailwort, point to the opinion of our old herbalists, that the acrid juice of these plants, mingled with milk, cured whitlows, though, probably, the efficacy of the remedy belonged to the milk only, hot milk being still used in cases of whitlow.

4. *D. murális* (Speedwell-leaved Whitlow-grass).—*Stem* leafy, branched; *leaves* rough, egg-shaped, blunt, toothed, embracing the stem; *flower-stalks* spreading horizontally. Plant annual. This species has the tallest stems of any of the family, its small white flowers sometimes rising more than a foot high from the ground. It blossoms in May, on limestone rocks, but is a very rare plant.

5. *D. rupéstris* (Rock Whitlow-grass).—*Flower-stalk* leafless, or rarely with one leaf; *pouch* or *pod*, oblong-oval; *leaves* flat, lanceolate, and hairy. Plant perennial. This tiny flower is very beautiful, but very rare; rising just above the green moss, its little white blossoms, during July, stand amid stems with branches, each crowned with a tuft of soft fringed leaves, several of the flower-stalks coming up from the same root, and seldom more than an inch and a half in height. The words of the Rev. F. H. Lyte occur to memory when thinking of this delicate little plant, which has beauties to be seen only by him who patiently examines it.

"Spare this flower, this gentle flower—
The slender creature of a day;
Let it bloom out its little hour,
And pass away:
Too soon its fleeting charms must lie
Decay'd, unnoticed, overthrown;
Oh! hasten not its destiny,
Too like thy own!

"Oh spare this flower! thou know'st not what
Thy undiscerning hand would tear;
A thousand charms thou notest not
Lie treasured there:
Not Solomon, in all his state,
Was clad like Nature's simplest child;
Nor could the world combined create
One flow'ret wild."

The Rock Whitlow-grass grows among the crevices, or at the summit of some of the Highland mountains.

10. Camelína (Gold of Pleasure).

1. *C. satíva* (Common Gold of Pleasure).—*Leaves* entire, or sometimes slightly toothed, lanceolate and



arrow-shaped at the base; *pouches* very large, on long stalks; *seeds* rough. This Gold of Pleasure is certainly rather a naturalized than a truly wild flower. It is found in fields of flax, or in places near where flax has formerly grown, straying from thence into the waste places and field borders at a short distance; but it does not long propagate itself spontaneously in this country, and has disappeared from many localities in which it is recorded to have grown formerly. The author, a few years since, found a large quantity of it in a cornfield, near the strange-looking heap of stones between Rochester and Maidstone, commonly called Kit's Coty House, and believed to be the burial-place of Hengist and Horsa. The flowers grow, in June and July, in clusters; they are of a full yellow colour. The plant, however, is quite as conspicuous after flowering as when in blossom, for the pouches on their long stalks present an appearance different from that of any other of our wild plants, and remind one, by the form of their branches, of an old-fashioned candelabrum. Why the plant should have been called Gold of Pleasure is not very apparent; but Professor Burnett says that the name may have a satirical reference to the disappointment caused by gold spent in pleasure; this plant having no great beauty. It is much cultivated in Germany and other parts of the Continent, for the sake of the oil contained in its seeds; and it is known in most European countries. Gerarde says of it, "Ruellius teacheth that the poore peasant doth use the oile in banquets, and the rich in their lamps." One of its English names is *Myagrum;* the French call it *La Cameline;* the Germans, *Der*

Leindother. It is the *Vlaschdotter* of the Dutch ; and the *Miagro* of the Italian and Spaniard. The seeds are said to be a favourite food of geese, and cattle eat the plant. The oil procured from it is used for culinary, medicinal, and various household purposes. About five or six years since, Mr. Taylor sent to the Royal Institution a communication on the desirableness of introducing the culture of this plant into Ireland. This gentleman, who had for twenty years past been occupied in making various experiments on plants containing oil, had come to the conclusion that the oil contained in the *Camelina* was of much value, both to agriculturists and manufacturers. After describing the plant, and mentioning that it was a native of Siberia, he says, "The first supply of seed was received from Professor Fischer, of the Royal Agricultural Society at St. Petersburg. The soils best adapted to its cultivation are those of a light nature, though it will yield a crop on those of a most inferior description, and has been found on barren sandy soils, where no other vegetation was to be seen. It should be sown early in spring, and may be cultivated after any corn-crops, and is a non-exhauster of the ground." Professor Van Ost, an eminent experimental chemist of Belgium, says, "If farmers did but know the value of this plant they would all grow it. A fine oil which can be produced from the seeds at a low cost is fit for burning in lamps ; it can also be used in the manufacture of woollen goods and soap, and it is highly nutritive to cattle."



11. Kóniga (Sweet Alyssum).

1. *K. marítima* (Seaside Koniga, or Sweet Alyssum).—*Stem* somewhat woody at the base; *leaves* linear, lanceolate, hoary. Plant perennial. We never find this flower inland, and rarely even by the sea. It is not truly wild, never occurring far from a garden where it is or has been cultivated. It has yellow, honey-scented flowers, which blossom in July and August. The Calycine Alyssum (*Alyssum calycinum*) is sometimes enumerated among British plants, having established itself in several wild places, both in France and England; but it appears to be of recent introduction. It is called Calycine because its calyx does not fall off like that of the other species. The genus Koniga is by many writers included in that of Alyssum, which is the Mad-wort of the ancients, and the plants of which were supposed to allay anger. Several species are common garden flowers.

12. Cakílé (Sea Rocket).

1. *C. marítima* (Purple Sea Rocket).—*Stem* and foliage succulent; *leaves* pinnatifid, somewhat toothed. Plant annual. This plant, which is not uncommon on our sandy shores, is easily distinguished by its succulent habit, and its purplish-lilac flowers, which blossom from June till September. It is somewhat bushy, spreading out its zigzag branches, and bearing the same sea-green tint as the foliage of the stock or wallflower. The blossoms are sometimes white, or white streaked or

tinged with purple. The seed-vessels are very peculiar, the upper seed in each pouch being erect, and the lower pendent. The whole plant is said, by Anguillaria, to have powerful remedial virtues. One of its old English names was *Bunias*, and the French term it *Caquille;* the Germans, *Meerseuf;* the Dutch, *Europische Knodsvrugt;* while the Swedes call it *Strandsenap*. This, or a similar Sea Rocket, grows on the sandy shores of most countries of the northern hemisphere.

13. Crambé (Sea Kale).

1. *C. marítima* (Sea Kale).—*Pouch* pointless; *leaves* roundish, waved, and toothed; sea-green, and, as well as the *stem*, smooth. Plant perennial. It is chiefly on the sandy shores of the west of England that this plant abounds. It is not, however, confined to them, but grows in various places, both on cliffs and sand, as at St. Margaret's, and Langdon Bay, near Dover. It is very plentiful at some parts of the base of the cliffs between Dover and Folkestone, where, as we are whirled past it by the train, we may just get a glimpse of its white flowers and rich purple leaves, which, at a distance, look like gay blossoms. It flowers in June, and differs in no respect from the kind cultivated as an esculent in the kitchen garden. Crambé is one of the Greek names applied to the Cabbage; and our Kale is called by the French *Le Crambé*, and by the Italians *Crambe marina*. The Spaniards term it *Col marina;* the Danes call it *Strand Kaal;* it is *Der Meerkohl* of the Germans, and *Leerkool* of the Dutch. The country people in the west

of England have, for some centuries past, known its worth as a vegetable for the table, and have been in the habit of watching the young shoots and leaf-stalks, which no sooner push up the sand above them, than they are cut off underground, in the same way as asparagus. This occurs during March and April. The Sea Kale was introduced into gardens about the middle of the last century, and is now cultivated in every market garden, where it is forced, by planting it in a rich soil, and blanching the young shoots by sheltering them from the action of light. The origin of its cultivation as a garden vegetable is as follows. Many years since, Dr. Lettsom, when travelling along the southern coast of England, stayed to dine at Southampton. Wandering in the neighbourhood of that town, he saw some women cutting Kale in the sand, and observed that the plants were nearly buried in it. He thought they resembled young shoots of asparagus, and found, upon inquiry, that the fishermen and their families were in the habit of eating them when they could not procure other fresh vegetables. The Doctor tasted the raw succulent shoots, and ended by ordering some of this Sea Kale to be sent to the inn for his dinner. He some time after communicated this discovery to his friend, Mr. Curtis. The present mode of culture was introduced by that nurseryman, who having first made the plant known to the public by a pamphlet, which he published in its praise, afterwards sold packets of the seeds to the gardeners, and the plant came into general repute. The Tartarian Sea Kale, *C. Tartarica*, is called by the Hungarians Tartar bread ; and its large fleshy root, stripped of the bark, and sliced, is eaten

with oil and vinegar. Children eat this root boiled; and the young shoots are also cooked, like those of our native Kale.

14. Corónopus (Wart-cress).

1. *C. Ruéllii* (Wart-cress, or Swine's-cress).—*Pouch* undivided, rough, with little sharp points; *style* prominent; *leaves* twice pinnate, their segments linear. Plant annual. This, though a rare plant in Scotland, is common in England, and is in some country places called Star of the Earth. The flowers are very small and white, and blossom throughout the summer; and the cut leaves, fancied to resemble the foot of a bird, are remarkably disagreeable, both in flavour and odour. Notwithstanding this, however, they were doubtless formerly gathered for salad, as another species of Wart-cress still is, according to Delille, in Egypt. Our Wart-cress is a common weed, by road-sides and on waste places, and is in some villages called Herb Ivy, or Herb Eve.

2. *C. dídyma* (Lesser Wart-cress).—*Pouch* of two wrinkled lobes, notched; *style* very short; *leaves* once or twice pinnate. Plant annual. Little green tufts of this plant are very common by road-sides on the south and west of England, and often grow on the sand, or among the stones of the shore. Its small greenish flowers are to be detected throughout the summer, and the foliage, if trodden upon, emits a most disagreeable odour. The genus *Corónopus* is by some writers called *Senebiéra*, from M. Senebier, the Genevese physiologist.

15. Isátis (Woad).

1. *Pouch* wedge-shaped, very blunt, smooth, thrice as long as broad, compressed on the summit and at the sides into a sharp edge; *root-leaves* numerous, stalked, inversely egg-shaped, tapering at the base, crenate, smooth, or slightly hairy; *stem-leaves* entire, arrow-shaped at the base. Plant biennial. Many botanists consider that this plant is not truly wild, but it occurs in many places, as at the Isle of Ely, about old stone pits in some parts of Cambridgeshire, near Woolwich church, and other places. The old name of this plant was *Glastum*, from the Celtic *glas*, blue, whence also came the name of the town of Glastonbury. The ancient Britons are believed to have stained their bodies with the indelible woad; hence came the name of Britain, from the Celtic *Brith*, which signified paint. *Brithon*, according to Camden, signified a stained man; but it would be too rugged a word to suit the ear of the Romans, accustomed to a more euphonious language; hence, their historians called the country by the more sonorous name of Britannia. That we thus owe our oldest national name to the Woad, is an opinion pretty generally received; but of the origin of the name itself, we have no certain knowledge. The Picts were so called by the Romans because they, like the Britons, painted themselves, at first, it would seem, to render themselves attractive, as the South-Sea Islander would now stain himself with red; but that which was originally a mark of personal finery, was made in later times, by a refinement of barbarism, an object of terror, and the blue

stains were deepened to frighten the enemy. Probably this staining of the body was, as Mr. D'Israeli conjectures, a slight defence from the rigours of the atmosphere, or the annoyance of insects. The brightness of the blue induced the Celts to call the plant *Gwed*, a name still retained in France, where it is now sometimes termed *Guesde*. The Anglo-Saxons appear to have called it *Wad*, or *Woad*. The German name for it is *Färberwaid;* and it is the *Guado* of the Italians. The Spaniard calls the plant *Pastel*, and it is also so called in some parts of France.

Woad is still sometimes cultivated in England, as the dye obtained from its leaves is a substitute for indigo; but its cultivation is rare, because the price of labour in this land renders it more expensive than the foreign dye. Before the introduction of indigo, however, woad was commonly raised in various parts of Europe, especially in Germany; but the introduction of that plant had a sudden effect in diminishing the use of woad. At first, indigo and woad were used together in dyeing; then came the plan of using certain salts instead of woad, which in the then state of science produced so much mischief by injuring the cloths, that orders were issued by the Government of Thuringia, in the sixteenth century, that the use of indigo should be abolished; and it was in our country denounced as a dangerous drug, and ordered to be burned. Woad does not appear to have been a common crop in England at that time; and efforts were made to discourage its growth altogether. From the archives of the Corporation of Southampton, in 1597, it appears that a



remonstrance was entered against the sowing of woad in Hogland, "because the common sort of people find themselves greatly grieved withal, for that, after woad-sowing, there will grow no grass, or anything else for the cattle to feed upon."

The flowers of the Woad are in panicles, and of a bright yellow. They grow on an upright stem, about two or three feet in height, and appear in June and July, small spear-shaped yellowish bracts growing among them. The plant is a native of the south and middle of Europe, in stony places, from Spain and Sicily to the shores of the Baltic Sea. It also grows in cultivated fields in many parts of Asia, but was probably introduced there among the grain.

16. Dentária (Coral-root).

1. *D. bulbífera* (Bulbiferous Coral-root).—*Pod* narrow and tapering; *stem* quite simple; *lower leaves* pinnated; *upper leaves* often with buds on the axils. Plant perennial. This rare and pretty spring plant has, in April and May, pale purple flowers, scarcely darker than those of the Cuckoo-flower (*Cardaminé pratensis*), and somewhat resembling them. The Coral-root, however, is very easily distinguished from other plants, by the little dark scaly buds which grow between the upper leaves and the stem, and which, when ripened, fall off and produce new plants. This plant grows in shady places in Middlesex, Sussex, Herts, and some other counties. The author once found it in a small wood near Tunbridge Wells. The roots, which are of whitish colour, and

creeping, have thick fleshy scales upon them, and the stem is about a foot, or a foot and a half in height. Some very showy species are cultivated in gardens, with purple, white, or yellow flowers; and the root of a plant, called the Two-leaved Coral-root, is used by the Americans instead of mustard, and is called Pepper-root.

17. Cardamíne (Bitter Cress).

1. *C. amára* (Large-flowered Bitter Cress).—*Leaves* pinnate, without stipules; *leaflets* of root-leaves rounded, those of the stem-leaves toothed, or angular; *stem* creeping at the base; *style* oblique. Plant perennial. The large white flowers, with purple anthers, at once characterise this plant. It blossoms in April and May, and is much less frequent than the next species, though, like that, usually found in moist places. It is very bitter and astringent.

2. *C. praténsis* (Cuckoo-flower).—*Leaves* pinnate, without stipules: *root-leaflets* roundish, and toothed, those of the stem nearly entire; *style* straight. Plant perennial. The song of the cuckoo, though monotonous, is delightful, and its two sweet notes—the only notes among birds which accord exactly with the musical scale—awaken, as they echo against the hill-side, feelings of joy in many hearts. No wonder that the oldest ballad in our language told of the bird, and said, "Well singest thou, cuckoo!" No wonder that old lovers of flowers, as they walked the spring meadow, associated many of its blossoms with the voice of the bird, and that cuckoo's-meat and cuckoo-flowers were in abundance

by their path. Gerarde says of this *Cardaminé*, that it "doth flower in April and Maie, when the cuckoo doth begin to sing her pleasant notes without stammering." Never is the green earth greener or more gay with delicate flowers than at this season, when the white daisy is open all over the fields, "like labour smiling on a holiday;" and the blue Speedwells gleam like gems among the grass, and the fairy Stitchwort nods by bluebells and primrose tufts. Shakespere speaks of the flower by another of its older names, and

> "The daisies pied and violets blue,
> And lady-smocks all silver white,"

were looked on by him, as by us, with joy. The origin of the poet's name is not so obvious as is that of Cuckoo-flower. Sir J. E. Smith supposes that this flower growing in great quantities, and bleached by long exposure to the sun, suggested to our fathers the idea of linen laid out on the grass to dry. The plant is still commonly called by the latter name in country places; and poets of our day, like Millhouse, know it by the name familiar to their childhood:—

> "Joyous I've found the glossy crocus blowing
> Fair in its bed of green; and onward stray'd
> To sunny dells, where April's hand was throwing
> Violets of virgin sweetness, and survey'd
> The pale-eyed primrose, glistening in the glade:
> Daisies, vermilion-tinged, were deem'd a prize
> And pluck'd in triumph; while the sloe-bloom made
> Garlands for mating birds, and thence would rise
> Vouchings of parent love in anthems to the skies.

"And at sweet May-tide, when the cowslip hung
Its head in pensiveness, and crow-flowers bright
Along the expanse of lengthening meads were flung,
Mingled with lady-smocks and daisies white,
Lambsfoot and speedwell, and the lovely sight
Of hawthorn blossoms fragrant on the gale
Of eve; full oft I've wander'd with delight;
Nor, time regretting, will I e'er bewail
Those hours I loitering spent in woodland, mead, and dale."

The poet was right, for hours spent in watching the flowers are not to be regretted. Many a lesson of God's love is learned among them; many a scene of beauty gathered thence, to be laid up as a store for future memories. Such sights and thoughts come with so healing an influence to the care-worn spirit, that we are not surprised at the assertion of Priest, "that, in all his extensive practice in insanity, he never met with an insane naturalist."

"Better for man,
Were he and Nature more familiar friends."

The leaves of the Cuckoo-flower are very pungent, but these, with many of their kind, were relished formerly as salad herbs. The flowers are usually of delicate pale lilac, veined with a darker lilac; sometimes they are of pinkish white, and when about to wither, quite white. They are very plentiful in moist meadows, and are sometimes double. When this is the case, their leaflets, as they come in contact with the ground, often produce new plants while still attached to the old.

3. *C. impátiens* (Narrow-leaved bitter Cress).—*Leaves*

pinnate; *leaflets* lanceolate, slightly cut, or entire, fringed; *stipules* at the base of the leaf-stalks. Plant annual. The moist rocks of some of our northern counties, and some parts of Scotland, are the recorded habitats of this rare flower. It has very small white blossoms during May and June, and the fringed stipules afford a distinctive mark to the species.

4. *C. hirsúta* (Hairy Bitter Cress).—*Leaves* pinnate, without stipules; *leaflets* stalked and toothed, those of the root rounded and angular, those of the stem nearly sessile and narrower; *pods* erect. Plant annual. The long pods afford a good character for this species, and it is called impatient, from the hasty manner in which the contents are jerked out. "The valves of these pods," says Mr. Johns, in his "Flowers of the Field," "when ripe, curl up with an elastic spring, if touched, and fly off, scattering the seeds to a considerable distance." The number of seeds, and their ready dispersion, account for the abundance of this plant, which is common everywhere, and is to be found in flower all the summer, though the pods are more conspicuous than the blossoms. It does not, like most of the species, confine itself to moist lands, though these seem most favourable to it, as it withers much earlier in dry places, dying away by the end of April. The leaves of this species, also, are used as salad, and are far more agreeable in flavour than those of the Cuckoo-flower. The French call the plant *Le Cresson*, the Germans *Die Gauchblume*, and the Italians *Cardamindo*. The plants are regarded by our continental neighbours, as well as by villagers in England, as possessing great stoma-

chic virtues. Some very pretty species are cultivated by gardeners.

18. Arabis (Rock Cress).

1. *A. thaliána* (Thale-cress, or Rock-cress).—*Leaves* oblong, somewhat toothed, hairy; *root-leaves* slightly stalked; *stem* branched; *pods* angular, twice as long as their stalk. Plant annual. This is a very common little herb on dry walls, bearing small white flowers from May to July. The stem is seldom more than six inches high. It is called in France *L'Arabette*, and in Germany, *Der Gausekraut*. The Dutch term this, or another of the species, *Honigschub*, and it is the *Arabide* of the Spaniard. De Theis, in order to account for its botanical name, as well as that by which it is familiarly known in some countries, supposes that the plant is a native of Arabia, but this is a forced and improbable explanation.

2. *A. hirsúta* (Hairy Rock-cress).—*Leaves* all hairy and toothed; *stem-leaves* clasping, heart-shaped at the base, and numerous; *pods* erect and straight. Plant biennial. The Hairy Rock-cress is a stiff rigid plant, common on walls, rocks, and banks, in England and Scotland. It is about a foot in height, and bears small white flowers during June and July.

3. *A. Petræa* (Alpine Rock-cress).—*Root-leaves* pinnatifid and stalked, with smaller lobes at their base; *stem-leaves* nearly entire, and sessile. Plant perennial. This species is found on the rocks of Scotland and Wales. It has white flowers, tinged with purple, which are rather larger than those of the Hairy Rock-cress, and it



blooms from June to August. It is frequent on the high mountains of the west and north of Scotland, and is a slender plant, from four to six inches in height, sometimes quite smooth, but usually more or less hairy.

4. *A. ciliáta* (Fringed Rock-cress).—*Leaves* somewhat toothed, oval, smooth, and fringed with minute hairs; *root-leaves* obtuse, and nearly sessile; those of the *stem* either roundish at the base, or clasping; *pods* nearly erect. Plant biennial. The small white flowers of this species, which is rare, may be seen from August to September. It grows at Connemara, in Ireland, and Glen Esk, in Scotland, and its stem is from four to six inches in height.

5. *A. strícta* (Bristol Rock-cress).—*Root-leaves* waved and toothed; *stem-leaves* sessile; *stems* hairy at the base; *pods* erect. Plant perennial. This is very rare, growing on the limestone soil of St. Vincent's Rocks, near Bristol. The root-leaves are edged with many strong but fine hairs. The plant flowers from March till May, and is much like the Shale-cress, but its blossoms are about twice the size of those of that plant.

6. *A. Turríta* (Tower Rock-cress).—*Leaves* clasping the stem; *pods* slender, curved downwards, and flat, with the margins thickened; *bracts* at the base of the flowers. Plant biennial. This plant, which is a doubtful native, would seem to have some preference to the halls of learning, for its only recorded habitats are the walls of Trinity and St. John's Colleges, Cambridge, and of Magdalen College, Oxford. It is well characterised by the form of its pods and its bracts. It blossoms in June.

19. Turrítis (Tower-mustard).

1. *T. glábra* (Smooth Tower-mustard).—*Root-leaves* toothed, hairy; *stem-leaves* clasping, entire, and smooth. Plant annual. The only British species of this genus is very similar to the Rock-cresses, being distinguished from them by having the seeds in its pods arranged in two rows instead of one. It is rather a local than a rare plant, growing very commonly on the dry banks of some counties, as of Norfolk and Suffolk. Its flowers are yellowish white, and open in June. The somewhat pyramidal appearance of the leaves and stem of this plant probably originated its generic name, and its long pod has given to it also the name of Long-podded Mustard. The French call the plant *La Tourette*, the Germans *Das Thurnkraut*. It is the *Turrekruid* of the Dutch, and its Swedish name is *Rockentrap*.

20. Barbaréa (Winter-cress).

1. *B. vulgáris* (Common Winter-cress).—*Lower leaves* lyre-shaped, the terminal lobe roundish; *upper* inversely egg-shaped, toothed. Plant perennial. The angular stem, and dark, shining, smooth leaves distinguish this plant from the wild mustard, which it much resembles. Its flowers appear from May to August, and are very numerous, and of bright yellow colour. The plant is often called Hedge-mustard, and is termed also Winter-cress, Yellow Rocket Herb, and Herb St. Barbara. The French call it *La Barbarée*, the Spanish *Hierba de Santa Barbara*, and the Italians *Barbarea*. It is common



on moist waste grounds; and although its leaves are disagreeably bitter, it is said to be cultivated now in some countries for salad; and we well know that the young leaves were eaten in winter and early spring by our forefathers. It is not the English name alone which retains the memory of the Winter-cress, for the plant is *Die Winterkresse* of the Germans, and the *Winterkers* of the Dutch, while it is commonly called *Vinterkurs* in Denmark. The leaves are, at the best, so nauseous, however, that when we taste them, we are ready to invoke blessings on the man who introduced the lettuce and the radish. In Sweden they are sometimes boiled as greens. Cows will eat the plant, but it is refused by horses. Baxter remarks of this Winter-cress, "A minute species of *Tipula*, or Gall-gnat, sometimes renders the flowers like a hop-blossom; but this metamorphosis does not strictly partake of the nature of galls, as it originates, not from the egg, but from the larva, which, in the operation of extracting the seed, in some way imparts a morbid action to the juices, causing the flower to expand unnaturally." He adds, "that a minute fungus, *Uredo candida*, is parasitical on the under side of the leaves, and on the stem of this plant, all the summer."

2. *B. præcox* (Early Winter-cerss.)—*Lower leaves* lyre-shaped, or pinnate; *upper ones* pinnatifid; *segments* linear, oblong, entire, obtuse, scarcely thicker than the flower-stalk. Plant biennial. This species is more slender than the last, and has narrower leaves. It is not uncommon in the West of England. Several of the cresses have been introduced among seeds into Australia; and Backhouse describes a perennial species, which has

become a very troublesome weed there, taking almost exclusive possession of the land.

* *Flowers white.*

21. Nastúrtium (Cress).

1. *N. officinále* (Common Water-cress).—*Leaves* pinnate; *leaflets* roundish, or oblong, toothed and waved; *pods* slender, about an inch long. Plant perennial. The small white flowers of this plant, though blooming from June to August, would scarcely be seen by any but a botanist. The Water-cress is found in many of our ponds and rivers, such as the poet has described—

> "The rivulet,
> Wanton and wild, through many a green ravine,
> Beneath the forest flow'd: sometimes it fell
> Among the moss, with hollow harmony,
> Dark and profound. Now, on the polish'd stones
> It danced, like childhood, laughing as it went.
> Then through the plain, in tranquil wanderings, crept,
> Reflecting every herb and drooping bud
> That overhung its quietness."

Sweet little nooks abound in our country where crystal streams are lying, and where—

> "The cresses, which grow where no man may see them,"

are springing up in plenty. The streams, indeed, are not always lined with verdure, especially in the neighbourhood of villages; yet sometimes, as we have looked even into these waters, gliding by the cresses, over some red tile, or pieces of blue earthenware, and sweeping down the emerald grasses in their course, it has seemed as if the waters were flowing over a bright



mosaic work, and we have thought of the good moral lesson drawn by Ruskin from the gutter of the city. "Even in the heart of the foul city it is not altogether base; down in that, if you will look deep, you may see the dark serious blue of far off sky, and the passing of pure clouds. It is at your own will that you see in that despised stream either the refuse of the street, or the image of the sky—so it is with almost all other things that we unkindly despise."

But the water-cress stream, whether running by the wayside, or half hiding itself amid shadowing trees, is almost sure to be discovered by some poor woman who earns a scanty subsistence by gathering and selling the wholesome salad. In all countries, from Sweden to Greece, and in the streams among the hills of India, Brazil, Australia, everywhere, may be found the water-cress. The Parisian calls it *Cresson au Poulet*, because he eats it with his roasted fowl; and the French peasant terms it *Cresson de Fontaine*. The substantial luncheon of the German is not without its *Brunnenkresse;* while its name of *Waterkers*, still used by the Dutch, was probably too its old English name, for as Dr. Jacob has suggested, the vulgar proverb of not caring a "curse" for anything was doubtless originally not caring a cress, Chaucer referring to the plant by the old Saxon name of *Kers*. The Italians give it the sweet-sounding name of *Crescione*, while it bears many a strange and uncouth name in some of the lands where the language shows the rudeness of the people.

That the water-cress has long been used as a salad, both herbalists and poets have told us. Robert Herrick,

who in his later years lamented the "unbaptized rhymes" of his youth, has a little thanksgiving poem, beautiful for its simplicity, in which he alludes to it:—

"Lord, thou hast given me a cell
Wherein to dwell;
A little house, whose humble roof
Is weather-proof,
Under the spars of which I lie,
Both soft and dry;
Where thou my chamber soft to ward,
Hast set a guard
Of harmless thoughts, to watch and keep
Me while I sleep.
Low is my porch as is my fate,
Both void of state;
And yet the threshold of my door
Is worn by the poor,
Who hither come and freely get
Good words or meat.
Like as my parlour, so my hall
And kitchen's small;
A little butterie, and therein
A little byn:—
Some little sticks of thorn or brier
Make me a fire,
Close by whose living coal I sit
And glow like it.
Lord, I confess too, when I dine
The pulse is thine,
And all those other bits that be
There placed by Thee,—
The worts, the purslane, and the mess
Of water-cress."

Generally acceptable, however, as are the pungent leaves of the water-cress, they could excite the most painful sensations in the mind of the learned Scaliger,

who used to turn pale at the very sight of them. They are said, by Müller, to contain iodine; and the late M. Planche, and other chemists, have proved that they, as well as some other cruciferous plants, contain sulphur. M. Vogel, sen., remarking this fact, thought that as soils distant from volcanoes have not any perceptible traces of sulphur, it is not impossible that plants which are much disposed to assimilate it may have the property of deriving sulphur from the decomposition of the sulphuric acid of sulphates. M. Vogel, however, found afterwards, that seeds placed in the soil perfectly free from sulphur or sulphates, yielded plants which contained a notable quantity of sulphur; water-cresses were of this description; and this chemist states that 100 grs. of water-cress seeds contained 0·129 gr. of sulphur. He adds that this is a perfect enigma to him, as the growth of the young water-cresses took place in a soil devoid of sulphur and sulphates, and in a room which contained no sulphureous vapour.

Since the year 1808, the water-cress has been largely cultivated by market-gardeners near London, Paris, Edinburgh, and other large cities; and Loudon mentions a pure stream which runs over chalk, near Rickmansworth, in Hertfordshire, in which one cultivator grows four acres, and sends thence a daily supply to the London market. When much exposed to the light, the leaves acquire a purplish brown tint.

* * *Flowers yellow.*

2. *N. sylvéstre* (Creeping Yellow Cress).—*Leaves* pinnate; *leaflets* lanceolate cut, those of the uppermost

leaves almost entire; *root* creeping; *pods* long and narrow. Plant perennial. This is not a common cress either in England or Scotland, but it occurs on some waste places and river sides in both countries. The stem is about a foot high, branched and angular, and the yellow blossoms are open from June to August.

3. *N. amphíbium* (Amphibious Yellow Cress, Great Water Radish).—*Leaves* pinnatifid, or deeply serrated; *roots* stringy; *petals* longer than the calyx. Plant perennial. This plant has yellow flowers from June to August, and is much larger than the creeping species; and very remarkable for the long stringy roots, which, springing from the lower joints of the stem, run down into the soft soil on the margins of rivers.

4. *N. terréstre* (Annual Yellow Cress).—*Leaves* pinnatifid, somewhat lyre-shaped, unequally toothed; *pods* thick and oblong; *root* fibrous. This cress, which is about a foot high, bears from June to September small yellow flowers, of which the petals are not longer than the calyx. It grows in watery places, and is annual.

22. Sisýmbrium (Hedge Mustard).

1. *S. officinále* (Common Hedge Mustard).—*Pods* downy, closely pressed to the stem; *leaves* hairy, deeply lobed, with the points turned backward, the terminal lobe large and roundish in the upper leaves, and oblong in the lower ones. Plant annual. Everybody knows this common wayside flower, or weed as most would term it, for it has little beauty to recommend it. It may be seen all the summer long, grey with the dust of



the road, and looking very shaggy in its foliage; while the yellow flowers, on a stem one or two feet high, are almost too small to be noticed. It has the usual pungent flavour of the mustard plants; but in this case, that flavour is disagreeable. This species is of old renown as a medicinal herb, and has so much repute as a remedy for hoarseness and weak lungs, that the French term it *Herbe aux chanteurs*. Dr. Cullen recommends its use when mixed with honey and sugar, for pulmonary affections. The Greeks gave the name of *Sisymbrium* to some plant which they prized, but assuredly they did not allude to this hedge mustard, for theirs was an aquatic, and had, apparently, a pleasant odour; and garlands of myrtle, roses, and Sisymbrium, were deemed meet offerings to Venus. The monks, too, cultivated a plant called *Sisymbrium*, but as the water-cress and radish were formerly included in this genus, it was probably one of those plants. The highly-prized virtues, however, both of this species and another of the genus, the flix-weed, render it not unlikely that it found a place in the monastery garden. An ancient plan of the monastery of St. Gall, near the lake of Constance, an institution celebrated throughout Europe for its learned men and complete library, enables us to form an idea of the plants which were, in the ninth century, considered of most importance in the continental monasteries; and they were, doubtless, very similar to those valued in our country at the same period. Several vegetables yet in common use are included in this plan of the kitchen garden, for the monks had a great taste for horticulture, and were not slow to admit new plants, as, in some cases,

people of later days have been, when the potato was rejected with scorn, till Louis XV. of France recommended it in that country, by wearing amidst his courtiers a bouquet of its flowers; and till some Englishmen, spite of popular clamour, persevered in its culture here. In the thirteenth century, the religious order of the Cistercians were pre-eminent for their horticultural skill; and Necham, an abbot, describes the chief esculents of those days, as lettuce, rocket, mustard, water-cress, and hop. Some of these were cultivated at St. Gall. Thus the plan referred to describes the physic-garden as consisting of sixteen beds, each of which has the name of some herb inscribed upon it in the following order:— peppermint, rosemary, white lily, sage, rue, comfrey, penny-royal, fengreek, rose, water-cress, or radish, or mustard (*sisymbrium*), cummin, lovage, fennel, tansy, kidney-bean, savory. The beds of the kitchen garden were also marked out, and were thus arranged:— onions, garlick, leeks, shallots, celery, parsley, coriander, chervill, dill, lettuce, poppy, savory, radish, parsnip, carrots, cabbage, beet, corn cockle.

2. *S. Írio* (London Rocket).—*Leaves* deeply lobed, with the points turned backward, toothed, and, as well as the stem, smooth; *pods* erect. Plant annual. This rocket, which is still very common about our metropolis, first appeared there after the Great Fire of London. In the spring succeeding that calamity, the young plants were seen everywhere rising up among the ruins, and in the summer the crop was so luxuriant, that it was supposed the whole of Europe did not contain so many specimens of the rocket as were then crowded over the

surface of London. It was at that time a great marvel to observing men; and after all that has been written on the subject of the sudden appearance of plants in particular spots, it is a marvel still. The fact is well known, but not accounted for, that a layer of quicklime thrown over a soil will at once produce white clover plants in abundance, when they had not before grown on the spot; and so, too, the burning of rubbish leaves ashes favourable to the growth of the rocket. Baxter in his "British Flowering Plants" mentions a circumstance analogous to that which succeeded the fire of London, as having occurred near the Oxford Botanic Garden. "During the time," says this writer, "that the alterations were going on in the garden, last year, 1834, the rubbish was removed to a piece of ground on the outside of the walls. This rubbish as it accumulated was set fire to from time to time, and was frequently burning for two or three days together, so that in the course of the season a considerable quantity of ashes was produced. Having received in the spring of the present year, 1835, a valuable collection of cuttings of nearly all the species of British Willows, from W. Borrer, Esq., of Henfield, Sussex, this was the only piece of ground which we could appropriate to a Salicetum; and in order to prepare it for the reception of the cuttings, the ashes were spread regularly over the surface, and the whole of it was trenched over; in a short time the very spot on which the rubbish was burnt produced an abundant crop of Sisymbrium Irio, and that, on a part of the garden where I never remember seeing it before."

The London Rocket is a leafy plant, about two feet in height, bearing small yellow flowers in July and August. It grows in waste places, but is not frequent.

3. *S. Sophia* (Fine-leaved Hedge-mustard, or Flix-weed).—*Leaves* twice pinnatifid, and slightly hairy; *petals* shorter than the calyx; *pods* slender, and erect. Plant annual. There is little to attract us in this species, but it is of easy recognition, having a most marked character. It is a slender plant, about two feet high, branched, and bearing small yellow flowers from June to August; and its leaves are divided into narrow segments, a circumstance very unusual in the cruciferous tribe. It is not uncommon in waste places in England, though somewhat so in Scotland; and, as the Rev. C. A. Johns has remarked, its "numerous erect pods, when ripe, have the appearance of being beaded, from the great number of projecting seeds." It had a name among the herbalists expressive of some virtues which we in modern days do not discover, for they termed it *Sophia Chirurgorum*, the Wisdom of Surgeons; and one of them, who says that Paracelsus extols it to the skies, adds, "it is fitting that syrup, ointment, and plaisters of it were kept in your houses." It has been thought serviceable in hysterical cases, but its chief repute was for healing wounds. Its seeds, powdered and mixed with gunpowder, are said to increase its explosive force; it is probable that they contain sulphur, as do those of some allied plants.



23. Erýsimum (Treacle-mustard).

1. *E. cheiranthóides* (Worm-seed Treacle-mustard).—*Leaves* narrow and oblong, slightly toothed, rough, with starry, three-forked hairs; *pods* erect, on spreading stalks; *seeds* small, and numerous. Plant annual. It is from this plant that the familiar name of the whole genus is derived, as it was formerly one of the ingredients of the famous Venice treacle. The name of Worm-seed refers to the uses of the seeds in medicine. The plant is not uncommon in this country, on waste places, and cultivated lands, and frequently grows among osiers and willows, varying much in size, according to soil and situation. The stem, which is much branched, is from half a foot to two feet in height, and the flowers are very small and numerous, and appear in July and August. They are yellow, with whitish sepals, and the foliage is of dull green tint. It is by many writers thought to be not indigenous, but it has long established itself in most of the countries of Europe, as well as of North America. The leaves are pungent, and their juice is acrid, though less so than that of some other species, which will raise blisters on the skin.

2. *E. Alliária* (Garlic Treacle-mustard, Jack-by-the Hedge, or Sauce-alone).—*Leaves* broadly heart-shaped, large, strongly veined, and stalked, with numerous broad teeth; *pods* erect, on spreading stalks. Plant annual. Most persons who are accustomed during April and May to hunt the hedge-row for the hidden violet, have met with this Garlic Treacle-mustard. It is well, if at some time or other, the spring nosegay has not been

spoiled by its offensive odour, for the garlic-like scent not being perceptible till the plant is bruised, may not have been discovered till too late. If crushed, however, its odour is most disagreeable, and as powerful as the strongest garlic. The flowers grow in clusters, and are of pure white, and the stem is about a foot or more high. Its name of Sauce-alone was given from its uses, and to some who cannot afford more costly condiments, it is serviceable in adding flavour to the frugal diet. It is often the labourer's "sauce," and is eaten with their rustic dinner by some of those who, as Wordsworth reminds us,—

> "The poor men's children, they, and they alone,
> By their condition taught, can understand
> The wisdom of that prayer that daily asks
> For daily bread."

Sometimes this Hedge Garlic is used as a salad herb with lettuce; and Neill says that it makes an excellent vegetable when boiled and eaten with mutton, or salted meat. The author has often eaten it thus during childhood, as well as when cut up into small pieces; and, mixed with vinegar, it has been served up like mint sauce. Linnæus ascertained by his experiments that cows, sheep, and poultry feed on it, but that it is refused by horses and goats. It is not a desirable herb, however, on the pasture, as it gives a strong flavour of garlic to the milk of the cow, and the flesh of the fowl. It was very much prized in the olden times for its medicinal virtues, its seeds being thought useful in several maladies; while even in the present day the leaves are

common used in villages as an external application for sore throat, and also for wounds. A species of *Erysimum* was prized by the ancients, but this appears to have been our garden cress, *Lepídium satívum ;* for Pliny tells us that the Gauls called his Erysimum *velar*, and this cress is still called *vilhar* in the Basque tongue, and *beler*, or *veler*, in some provinces of France. Our Jack-by-the-Hedge grows in hedges and ditches throughout Europe. The Germans call it by several names, as *Das Knoblauchkraut, der Knoblauchhederick, Lauchel, Wald-knoblauch, Ramfen, Ramschelwourzel, Gernsel, Salickraut, Saskraud.* In France it is termed *L'Alliare, L'herbe aux Aillets*, and *Le velar*. The Dutch call it *Steenraket*, the Italians *Erisamo*, and the Spaniards *Jaramago*. This plant is by many botanists made a distinct genus, under the name of *Alliaria*.

3. *E. orientále* (Hare's-ear Treacle-mustard).—*Leaves* elliptical, heart-shaped, obtuse, clasping the stem ; *root-leaves* inversely egg-shaped ; all smooth and undivided. Plant annual. This species, which is about a foot high, is chiefly found in this country near the sea, on cliffs, or in fields. It occurs in some parts of Ireland, and in various places on the coasts of Essex, Suffolk, and Sussex. It is also a native of the South of Europe. The flowers are small, white, or cream-coloured, and the leaves have the pale sea-green powdery bloom on their surface which the botanist terms glaucous. There are above fifty species of the genus *Erysimum*, and several are very pretty garden plants, with yellow, white, or purple blossoms, several of the smaller ones being very ornamental to rock-work.

24. Cheiránthus (Wall-flower).

1. *C. Cheíri* (Common Wall-flower).—*Leaves* lanceolate, acute, entire, downy; *pods* long and narrow; *stem* shrubby at the base. Plant perennial. Who has not welcomed the scent of the wall-flowers, as it was brought to him on the spring breezes, in his wanderings by the old tower, when they quivered to the passing winds, from ruined hall or ivied church? We can all recal places where it grows thus high above us; and the thought can awaken associations connected with spots where,

> "The house of God uplifts its ancient walls,
> Wreath'd in the verdant honours of the year;
> Within the sacred fane have race on race,
> The children of the upland and the dale,
> Devoutly worshipp'd; and beneath the mounds,
> The grassy mounds, which stud the village yard,
> Withdrawn to rest at last."

Nor is it in our own loved land only that the wall-flower is associated with the buildings reared by men of other days. The traveller among the ruins of ancient Rome is gladdened by its scent and beauty; and broken walls and fallen capitals have the wall-flower waving on the summits, while the vermilion-spotted mignonette blends with it its own sweet odours. The traveller in Eastern lands sees it amongst the oriental flowers, still loving the old wall better than any other place, and affording to the Eastern poet as many an image and sentiment of loveliness as was gathered by the troubadour, or is caught by the bard of our days and country.



But though the wall-flower, as its name imports, springs from walls, yet the sea-cliffs afford it as welcome a place of growth. Many a crag and peak is enlivened in the early spring by its clumps of yellow flowers; and in March and April the old cliffs of Dover, among whose shadows, or in whose broad sunshine, lies many a lovely blossom, are rich with thousands of its blooms. Our fathers called it the Winter Gilly-flower,—for it may be seen while wintry winds are still uttering their wild music; and March Gilly-flower, which is another of their old names, is equally appropriate. The flower when truly wild is rarely tinged with iron-brown—we never saw it so on the wall-flower of Dover; but the variety which is cultivated in gardens has the deeper tint, and is less firm in its aspect, its petals becoming more flaccid. Yellow Violet and Yellow Stock Gilly-flowers were others of its old names; and the Dutch now call it *Violier*, while it is the *Giroflée* of the French, and *Die Leucoje* of the Germans. By some botanists it is considered to be the *Viola* of Classic authors.

The wall-flower is of little economical use, though it is sometimes planted in pastures, as the leaves are beneficial in some cases to sheep. Our forefathers attributed to it various virtues; and a conserve made of the flowers was used as a remedy both for the apoplexy and the palsy; and was esteemed "a singular remedy for the gout and pains in the joints and sinews." But though we no longer use its petals for medicine, and cannot eat its pungent leaves, yet we regard its beauty and sweetness as its uses. The time was when men believed that every plant had its known or unknown

virtues, and thought that they honoured the Great Creator by thus believing. But it is proof enough for us of God's goodness that the flower can charm the eye and elevate the thought, that it can soothe the sorrow, or awaken the memory; that it can whisper to us a tale of His love and care for the flowers of the field, and a blessed assurance that we and our least concerns are under His watchful eye, and share in His ever-present goodness. And so our walks over hills and meadows, by sea-cliff or rural stream, shall teach us more of Him by means of His sweetest gifts.

The wall-flower was early cultivated in the English garden, and is yet, in its rich varieties of brown and yellow and double and single blossoms, a favourite plant of the border. The little garden plots in the city or in the square send forth fragrance from its petals, though sometimes as we see them, we are reminded of Elliott's description:—

> "But mourning better days, the widow here
> Still tries to make her little garden bloom,—
> For she was country-born. No weeds appear
> Where her poor pinks deplore their prison tomb;
> To them, alas! no second spring shall come;
> And there in May the lilac gasps for breath,
> And mint and thyme seem fain their woes to speak,
> Like saddest portraits painted after death;
> And spindling wall-flowers, in the choaking reek
> For life—for life uplift their branches weak."

The troubadours were very fond of the wall-flower, and the old Provençal ballads told its praises, nor have men of modern times left it unsung. Moir thus says of it—

"Sweet wall-flower, sweet wall-flower!
Thou conjurest up to me
Full many a soft and sunny hour
Of boyhood's thoughtless glee,
When joy from out the daisies grew
In woodland pastures green,
And summer skies were far more blue
Than since they e'er have been!"

25. Matthíola (Stock).

1. *M. incána* (Hoary Shrubby Stock).—*Stem* shrubby; *leaves* hoary with down, long and narrow, entire; *pods* without glands. Plant perennial. This sea-stock waves its light purple flowers on the southern shores of our island, bearing too much resemblance, both in form and odour, to the common Stock of the garden, to leave any doubt as to its name. It is found on the southern sea-shore of the Isle of Wight, especially about Niton, and on cliffs to the eastward of Hastings; in all these places it is apparently wild, as it probably is also on the cliffs at the east of Ramsgate, where also it may be seen in May and June. It is the origin of the stocks of the garden,—

"The white and purple gillyflowers, that stay
In blossom—lingering summer half away;"

and is there treated as an annual or biennial; and cultivated in the flower borders of both rich and poor.

Often, as the scent comes to us from some rich Double-Stock, we are reminded of the regard which Baron Cuvier had for this plant. It had been the favourite flower of his mother; and the great naturalist never forgot that that mother first directed his thoughts to the observation of nature. Her loved flower was

prized by him to his latest day of life, and so long as it was in season, his table was never without its fragrance.

> "A flower is not a flower alone,
> A thousand thoughts invest it."

The French call the Stock, *Le Giroflée;* our old writers term it Stock Gillyflower. In all old books on gardens we find how much it was prized; and it is not possible to read the literature of past centuries without discovering how garden-flowers were valued then, though comparatively few but simplers noticed the wild flowers. In an old work called "Delightes for Ladies to adorne their Persons and Closets and Distillations, with Beauties, Banquets, Perfumes, and Waters," we see how ladies of the olden time amused themselves with roses, pansies, and stock gillyflowers; and how, instead of making the modern compound of pot-pourri, they occupied themselves in "preserving single flowers without wrinkling." The author, Sir Hugh Plat, says, "I find the red-rose leafe best to be kept in this manner; also take away the stalks of pansies, stocke-gillyfloures, or other single floures; pricke them one by one in sande, pressing down their leaves smooth with more sande laid evenly upon them; and then you may have rose-leaves and other floures to laie about your basons, windows, &c. all the winter long." The mode prescribed for preparing these leaves was to wash some "Callis sand," and place it in a shallow square box, about six inches deep, and having made the sand level, to lay the petals of the flowers separately on the surface, placing a layer of sand over each layer of petals. The

whole were to be covered at top with a mass of sand, and to be set in the sunshine on a hot summer's day, and after a few days the dried flowers were to be carefully removed without breaking. Something of a *hortus siccus*, on a more extensive scale, was also directed to be made in like manner; for the author adds, "Also this secret is very requisite for a good simplifier, because he maie drie the leafe of any hearbe in this manner, and laie it very drie in his Herball, with the Simple which it representeth, whereby he may easily learn to know the name of any simple which he desireth." Happy the student of plants in our days, who needs to practise no such elaborate and uncertain methods of discovering the names of plants, but may find them all ready arranged for him in his Flora; and taking his book in hand, may wander forth and learn the characteristics and properties of every flower of the field. The leaves of all the stocks may be used, say our botanists, for salads or pot-herbs; that is, they are wholesome, but few would think them any addition to the dish of lettuce or endive. The genus *Matthiola* was named from the Italian physician of Ferdinand of Austria. He died in 1577, after having published a "laborious commentary" on Dioscorides; and commentaries in those days were indeed laborious, both to the writer and reader. Matthiolus was held in high repute as a botanist, and the beautiful stocks, such as our annual garden, wall-leaved, winter, and purple gilly-flowers are appropriate remembrances, and have remained on our beds amid all those changes of fashion which affect even flowers. The little garden flower used as an edging for the bed, and called the Virginian

stock, is properly the Mediterranean stock. It has been found apparently wild on some sea-cliffs near Dover, but doubtless was introduced there either by human hand, or by some of those aerial messengers which waft plants hither and thither.

2. *M. sinuata* (Great Sea-stock).—*Stem* herbaceous, spreading; *leaves* oblong, downy, the lower ones somewhat lobed; *pods* rough with prickles. Plant biennial. It is on the sandy coasts of Wales and Cornwall that we must look for this rare stock. It is night-scented, and very sober tinted, its blossom being of dull purple, and opening in the month of August. It is not, like many night-scented flowers, closed during day-time, but is like the blossoms of the lime-tree, the moschatel, and the musk mallow, in which the scent seems to increase as the dews of evening descend upon the petals. Through the night, too, its odour is perceptible, though this is not so powerful as in that singular species of the South of Europe, the Night-flowering Stock (*Matthiola tristis*), which is all day like a withered flower, and needs the air of night to freshen it into vigour and sweetness. Linnæus named night-blooming flowers *flores tristes*, and many deserve this name in a peculiar manner, like this stock, by their dull colour. But all are not, at least in this sense, sorrowful flowers, for that most magnificent of blossoms the Night-flowering Cereus (*Cactus grandiflora*), whose beauty is never revealed in the day-time, and whose full glory of hue and fragrance is attained at midnight, is of a beautiful white hue, and has a coronal of golden stamens. Of all night flowers it is the queen, and its scent is far more powerful than



that of any plant of our country. The dawn of morning, which bids so many flowers unfold, is a warning to the night flower to close its petals, and Scented Night-stock and Cereus are then scentless, and the latter even faded. Little beauty as our great Sea-stock may have to attract the eye of the wanderer, yet its odour renders it welcome to those who ramble forth to see the moonlight on the waters. It is not on the shore that we expect the odour of flowers, any more than the singing of birds. Both sounds and sweet airs of the country must yield here to the music of winds and waters, and the odour of the salt sea waves. Little scent comes from the cliff or sand, either by day or night, save that of an occasional clump of white Burnet roses, which sometimes stud the shore, or, on some rare spots, the powerful odour of the night-flowering Catchfly, or this large Stock.

26. Brássica (Cabbage; Turnip Navew).

1. *B. campéstris* (Common Wild Navew).—*Stem-leaves* heart-shaped, tapering to a point, clasping, glaucous; *root leaves* lyrate, toothed, somewhat rough; *pods* erect. Plant annual. This plant during June and July, when it is in flower, is so much like the common Charlock as to be easily mistaken for it. The smoothness and sea-green tint of its upper leaves serve as a distinction, for all the foliage of the Charlock is rough. The Navew is common on field-borders, in corn-fields, and ditches. It has several varieties, one of them, the *Brassica oleifera*, called the *Colsa*, or *Colza*, is one of the plants cultivated for the sake of its seed, known as Cole-seed, which yields a large quantity of oil. The

leaves of this plant are also used as fodder for cattle, and the stalks are burned for manure. It is thought to be the origin of the Swedish turnip of our agriculturists, and its root, which in its wild state is spindle-shaped, becomes, under culture, turnip-shaped. Sir William Hooker and Dr. Arnott remark, that, in Scotland, it has never been found, except where the Swedish turnip had been previously cultivated.

2. *B. olerácea* (Sea Cabbage).—*Root* stem-like, fleshy; *leaves* lobed, waved, smooth and glaucous; *upper ones* sessile, and oblong. Plant biennial. Few plants are more conspicuous on some of our sea-cliffs than this cabbage. On many of the cliffs of Devonshire, Cornwall, Wales, and Yorkshire, it is plentiful; and on the lofty heights of Dover it is, from May till the end of summer, one of the loveliest ornaments of the cliffs. Its large panicle of lemon-coloured blossoms contrasts beautifully then with the pink Centaury, and purple Knapweeds, and the rich blue of the Bugloss, which overtops them all. In winter, too, the old white cliffs receive some additional beauty from the foliage of this plant. Much of it is yet verdant when all around is fading; and dark, purplish, red tinted leaves mingle with those which are green, and with others which are of deepest yellow, and please the eye by their varied hues and graceful forms; and when the hoar frost spangles them, they seem enriched with glittering diamonds. The wind revels among the cliffs, rattling as it passes the old withered stalks, which in the last summer were gay with the flowers, but which now stand out from the crevices like the naked boughs of some shrub. In

summer the large blossoms may be seen far away up the cliff, hanging out from its very summit, or we may look at them as they cluster close by its base, or among the shingle and sand, just above the high-tide mark, but often dashed by the spray when winds are wild. The leaves have a salt and bitter flavour, but repeated washings will fit this cabbage for use, and when boiled it is a good vegetable. Boys occasionally gather it from the cliff, and carry it into the town for sale, but it does not seem to be much used in the neighbourhood either by rich or poor. The common Cabbage butterfly, *Pieris Brassica*, the caterpillar of which makes so much havoc in the kitchen garden, does not neglect the cabbage of the cliff, though it appears to prefer the cultivated plant. This the author had the opportunity of remarking in the summer of 1851, when a little garden on the cliff side, redeemed from the waste, and carefully tended by an industrious cottager, was visited by this caterpillar. A large piece of land had been planted with rows of cabbages, but not a single plant was uninjured. The whole produce was completely destroyed by the ravages of the devouring insects, while hundreds of wild cabbage plants bloomed around with leaves unharmed, or only here and there betrayed marks of the destroyer.

This Sea-cabbage, small as it is, with its few scattered leaves, is important as having been the origin of all the giant and small cabbages, both white and red, of Savoys and Brussels Sprouts, and delicate Cauliflowers and Brocoli, and all the varieties of greens which the gardener raises with so much care. None who looked on it as it grew on the cliff could have believed that culture

could have wrought such changes; but from earliest days it has received cultivation. There is no doubt that the *Brassicæ* of the ancients belonged to the Cabbage genus, though it would, indeed, be a waste of labour to attempt to discover to which of the kinds the Greek and Roman writers alluded. Indeed, in the lapse of ages so many new sorts have arisen, and, doubtless, so many old ones been lost, that it is impossible to tell whether that cabbage which the ancients ate raw to prevent intoxication is that of which the modern German makes his *sauer kraut*, or which the Turk pickles for his winter food, or which the Englishman boils for his "greens." We know that the ancients had a curled cabbage; they therefore, probably, dined sometimes on Brocoli. Our Cauliflower was brought from the Levant into Italy about the sixteenth century, and gradually found its way into England, though it was long a rare vegetable, and seems to have been unknown to Conrad Gesner, while it was regarded by Bauhin as so rare, that he particularly names the garden where he saw it growing. In Tarragona this vegetable is said, in our day, sometimes to weigh as much as forty pounds.

Numerous varieties of *Brassica* have been, and still are, produced by gardeners. There are thousand-headed and hundred-leaved varieties reared for cattle. There are drumheads, and various red and white cabbages and cauliflowers, cultivated for our vegetable diet, and savoys for our winter use. Our continental neighbours have produced their ribbed kale, and the Brussels sprouts are unexpanded leaf-buds of a common variety of cabbage. The celebrated *Kohl-rabi*, or turnip-stemmed

cabbage, has been, of late years, introduced into this country as food for cattle, and when young is sometimes cooked for our tables. There are Scotch Kales, Tree Kales, and Palm Kales, which last are sometimes ten or twelve feet in height; and the Cæsarean Cow-cabbage, which is described as attaining in La Vendée the enormous height of sixteen feet; and these plants are somewhat palm-like in the tufts of leaves which surround their stems. The inner portion of these cabbages, their "hearts," as they are termed, are good for the table, and the outer leaves are given to cattle. It is principally for these outer leaves that the palm kale is cultivated in Jersey.

The French have, like our own gardeners, a large number of varieties of cabbage under culture, and their *Choux verts*, their *Choux de Milan*, their *Cavaliers Roquettes*, and various others, are in common use.

Our wild cabbage grows on the sea-cliffs of several parts of the shores of Europe, and other wild cabbages grow on more distant shores. The cabbage plant, too, is a frequent object of culture in the East. Mr. Fortune, in his "Wanderings in China," says that one of the cabbage tribe, *Brassica Chinensis*, is extensively cultivated there, both in the province of Chekiang and also in Kiangse, and in great demand for the oil which is pressed from its seed. Its stems are three or four feet high, with yellow flowers, and long pods, and he remarks,—"In April, when the fields are in bloom, the whole country seems tinged with gold; and the fragrance which fills the air, particularly after an April shower, is delightful."

3. *B. Monénsis* (Isle-of-Man Cabbage).—*Leaves* pinnatifid and glaucous; *stem* nearly leafless, prostrate; *pods* 4-angled, 1 to 3-seeded. Plant perennial. This species is found on some parts of the north-west shores of our island, growing on the sand. Its bright lemon-coloured flowers are streaked with purple, and it blossoms in June and July. It is eaten by sheep and cattle with great avidity.

4. *B. Napus* (Rape or Cole-seed).—*Leaves* smooth, somewhat glaucous, lower ones lyrate and toothed, upper ones narrow and heart-shaped, clasping; *pods* spreading. Plant biennial. The slender-rooted variety of this cabbage is so much cultivated for the oil produced by its seeds, that we have many of the young plants in our corn-fields and waste ground, though the species is not truly wild. It has small yellow flowers in June and July, and its stem is about one or two feet in height. The whole plant is, in winter, useful as fodder for sheep, and is sometimes sown for spring salads, like mustard and cress. It is sometimes called Reps or Navette.

5. *B. Rápa* (Common Turnip).—*Root* fleshy, round or oblong; *root-leaves* lyrate and rough; lower *stem-leaves* cut, upper ones ovate, heart-shaped and clasping. Plant annual. This is not truly a British plant, though often found wild on field borders, and it is probably a variety of *B. campestris* or *B. Napus*. Our common turnips, so valuable to the agriculturist, in all their various tints of white, yellow, green, black, and red, are varieties of *B. Rapa*. Some of them are flat or roundish in form, others are oblong, and are termed Decanter or Tankard Turnips. Their importance in husbandry, their

value as food, both for man and animals, have rendered the culture of this vegetable very general both in this and other European countries. The roots are too well known on our tables to need any commendation, and the young green tops are also eaten. The loud cry of "Buy my turnip-tops," is one of the familiar sounds of the city on the early spring morning; and, though slightly bitter, yet these leaves form a pleasant as well as wholesome vegetable, and are much better when procured from the open field than the garden. Sir Humphry Davy ascertained that a comparatively small amount of nutritious matter was contained in the turnip —not more than forty-two parts in a thousand. It is probable that the Romans first cultivated the vegetable in this country; and there seems no reason to doubt that this was the plant known to them by the name of Rapa, though we have in modern times a much larger variety of kinds than they had. Their ancient writers strongly recommend the extensive growth of the turnip, because, as they said, those roots which were not required for human food could be given to cattle; and both Columella and Pliny state that the turnip was to be considered as next to corn in value and utility. Pliny mentions some of the turnips of his times as weighing forty pounds each,—a size never reached by the turnips of modern days; though a turnip grown in Surrey, in July 1828, is described as twenty-one pounds in weight, and one yard in circumference. It is well known that several plants introduced by the Romans were lost for a period, and their culture afterwards renewed; but it is quite probable that the cultivation of

this was at no time wholly discontinued. It is certain that the root was grown in the land during the sixteenth century; but about that period several vegetables now in use were introduced by the Flemish, so that we cannot be assured that this was not among that number. The turnip is mentioned by several writers at the latter end of that century. Cogan, in his "Haven of Health," published in 1597, says, that although many men love to eat turnips, yet do swine abhor them. From Gerarde's "Herbal," published at the same time, we may infer that more than one variety was cultivated in the neighbourhood of London at that period. "The small turnep," he says, "that grows by a village near London, called Hackney, in a sandie ground, and is brought to the crosse in Cheapside by the women of the village to be solde, is the best that I ever knew." Turnips have been used very extensively as food in seasons of dearth. Thus, in the years 1629—30, when there was great scarcity of provisions in England, excellent white bread was made of these roots, which for this purpose were boiled, and, the moisture being expressed, were kneaded with an equal quantity of wheaten flour. They were also thus eaten in Essex at a much later period.

St. Pierre, speaking of the beauties of the vegetables of the north of Europe, describes some very richly-tinted roots of the Turnip. "Nature," he says, "to indemnify these countries for the scarcity of apparent flowers, of which it produces but a small number, has bestowed their perfumes on several plants, as the Sweet Reed (*Calamus aromaticus*); the Birch, which in spring emits

a strong smell of roses ; and the Fir, the apples of which are sweet-scented. She has likewise diffused the most pleasing and the most brilliant colours of flowers on the most common of vegetables, such as the cones of the Larch, which are of a beautiful crimson, on the scarlet berries of the Service-tree, on the Mosses, the Mushroom, and even on the Swedish Turnip. On the subject of this last vegetable, hear what the accurate Cornelius Le Bruyn says in his voyage to Archangel :—' During our residence among them (the Samojedes), they brought us several species of turnips of various colours, and of surprising beauty. Some were violet, like our plums ; others grey, white, yellowish ; all were streaked with red, like vermilion, or the most beautiful lake, and as pleasing to the eye as a carnation. I painted some of them on paper in water-colours, and sent a quantity to Holland, in a box filled with dry sand, to one of my friends, a lover of this kind of curiosities. I carried my paintings to Archangel ; when nobody would believe they were copied from nature, till I produced the turnips themselves,—a proof that very little attention is there paid to the rarest and most curious productions of Nature.' These turnips I take to be of the species called *Ruta baga*, or Swedish Turnip, the bulb of which grows above the ground,—at least, I presume so, from the drawing which Le Bruyn himself gives of it, and because I have seen such in Finland. They are superior in taste to our cabbage, and have a flavour similar to the hearts of artichokes. I have produced these testimonies of a painter, and that painter a native of Holland, on the beauty of these colours, to overthrow

a prejudice which is so general, that in the Indies alone the sun gives a magnificent colouring to vegetables."

27. Sinápis (Mustard).

1. *S. arvénsis* (Wild Mustard, or Charlock).—*Leaves* rough, and toothed; *pods* with many angles, rugged, and knotty, longer than the awl-shaped beak; *stem* bristly. Plant annual. This Charlock is too frequent in the corn-fields, its yellow flowers gleaming there all the summer long. It is, like all mustards, very pungent, and might be cultivated for its seeds, but that their flavour is not so pleasant as that of the species commonly reared for the mustard of our tables. The flowers look bright among the green spring blades, and at the later season have such floral companions as the poet has described:—

"Earth is very beautiful amid these steeps and valleys!
Golden wheat now quivers rip'ning in the sun.
Up yon hazel'd slope the farmer loudly rallies
Reapers to their morning task; lo, it is begun!
Wild flowers around their varied tints are showing,
Sweeps of yellow Charlock around the fields are seen,
The scarlet hoods of poppies, 'mid dark green turnips glowing,
Are brighter than the ruby gems that deck an Indian queen.
Earth is very beautiful
Amid her valleys green!"

The Charlock is, in various counties, termed Cherlock, Garlock, Chadlock, or Cadlock. In Yorkshire it is called Runsh, and in many places is known by the name of Corn-mustard. Its young tops are boiled and eaten by country people.



2. *S. álba* (White Mustard).—*Pods* bristly, rugged, spreading, shorter than the flat two-edged beak; *leaves* pinnatifid. Plant annual. This plant grows on waste ground and by field borders, and has large yellow flowers in June: its young leaves are used as salad.

3. *S. nígra* (Common Mustard).—*Pods* quadrangular, smooth, slightly beaked; lower *leaves* lyrate; upper, linear, smooth. This species and the last are the plants commonly cultivated for the mustard of commerce, and large fields are sown for this produce, in Essex and other counties. The pungent seeds consist of a mucilaginous and farinaceous substance, combined with a bland fixed oil, and a volatile or essential one, of great pungency, in which sulphur is said by Müller to exist to the amount of about thirty per cent. The acridity of this latter oil is increased if the seeds are kept some time after they are gathered, or it is at once developed by steeping the seeds in vinegar. The seeds when prepared for use are first dried in a kiln, and ground to powder; when, by some delicate process, the black husks are removed. In France this process is either ill understood, or the husks are retained because they possess greater pungency than the inner portion of the seed; the French mustard is consequently stronger than ours, but not of so good a colour. Our English word "mustard," as well as the *moutarde* of the French, is derived from *mustum ardens*, "hot must;" the sweet must of new wine having been an old ingredient of the condiment, as used in France. In our country it is often prepared for the table by the admixture of the juice of horseradish, or other pungent substances, as

well as with milk; but when this is used, the preparation is only fit for immediate use.

The seeds of both this and the White Mustard have been used medicinally; and, like many other remedies whose properties are apparent, they have often been taken in total ignorance of the disease for which they were applied; and though in many cases unobjectionable, or even useful, have in some produced evil consequences. Professor Wheeler has recorded in the Chelsea Catalogue instances in which the use of mustard-seed proved fatal. Old writers had the highest opinion of its invigorating powers. The seeds were recommended to be mixed with gum arabic and rose-water, and taken before meals by those who had little appetite, or a weak digestion. "Let old men and women," says one of the herbalists, "take much of this medicine, and they will either give me thanks, or show manifest ingratitude." Its outward application was to produce marvellous relief to various pains, to take off the blackness of bruises, to cure the tooth-ache, and even to "help the falling off of the hair."

The young plants of the common mustard are good for salad, and are often raised in gardens to be eaten with cress. The Germans call this plant *Senf*. It is the *Senepa* of the Italians; the *Mostaro* of the Spaniards; and the *Mosterd* of the Dutch.

The seeds of the Mustard are remarkable for the rapidity of their development,—a quality well known to children, who watch with eagerness for the first seed-leaves which emerge from the soil so soon after they have sown the seeds in their little gardens; and it has

been jocosely said, that a salad might be grown while a joint of meat was being roasted. Professor Burnett, remarking on the tenacity of life of these seeds, says that when a crop of mustard has once been seeded, self-sown stragglers will come up for a century afterwards. Their rapidity of growth is greatly accelerated by certain conditions of the atmosphere. Mr. Pine, in a paper read to the Electrical Society, brings many cases to prove that luxuriance of vegetation is in proportion to the positive state of the air, and the negative state of the soil. Thus, a drooping Narcissus being removed into a room, the atmosphere of which was continually surcharged with electricity from a machine often used for electrical purposes, revived, and attained the gigantic height of thirty-six inches. Mustard-seed, in a pot, the soil of which was negatively electrical, vegetated with greater vigour than when in a positive soil, and much greater than when the seed was in its ordinary condition.

The little Mustard-seed has an interesting association, from having been more than once referred to by our Saviour; and "small as a grain of mustard-seed," was probably a common comparison with the Jews. The plants of Scripture, like those of the classical writers, have been the objects of much careful investigation, and, doubtless, many have been identified by the researches of late years. We owe much to Dr. Royle in this matter; and in a paper read before the Royal Asiatic Society, in 1844, this botanist, after showing the unsuitability of various plants hitherto supposed to be the *Sinapi* of the New Testament, concludes that the

true mustard-tree is the *Khardal* of the Arabs. This word is, in the Arabic language, synonymous with our mustard, and the tree thus named is abundant on the banks of the Jordan and the Sea of Tiberias, and is there used for the mustard of the table. It is the *Salvadora Persica* of the botanist, and is a tree with numerous branches, among which the birds of the air may take shelter, while its seed is so small, as well to symbolize that little germ of faith to which our Saviour referred, in answer to that prayer so needful for us all, which came at that time from the lips of his disciples, "Lord, increase our faith!" and which he elsewhere compared to the grain sown in the ground, which increased to the great tree. Irby and Mangles seem to have referred to this plant in their "Travels;" and Dr. Royle, after having added various proofs that the *Salvadora* was also known by the name of *Kharjal* in the north-west of India, remarks, "It is, at all events, interesting, as proving that the name *Kharjal*, even in so remote a country, is given to the same plant which in Syria is called *Khardal*, and which, no doubt, is the *Chardal* of the Talmudists, one of whom describes it as a tree of which the wood was sufficient to cover a potter's shed; and another says, that he was wont to climb into it as men climb into a fig-tree."

4. *S. tenuifolia* (Wall-rocket).—*Pods* shortly beaked, erect; *stems* erect, leafy; *leaves* long and narrow, very acute, pinnatifid, or twice-pinnatifid, smooth. Plant perennial. In the south, south-west, and east of England, this is a common plant, growing on a stem a foot or a foot and a half in height and bearing, from June to

September, a few pale yellow flowers. The different species of wild mustard are sometimes difficult of determination by the young botanist, but this may be known at once from the others by its peculiar odour. The flowers have a scent which, though disagreeable to some, is liked by others. The author was accustomed, during childhood, to call the flower Yellow Custards, because of its somewhat almond-like fragrance, a fragrance still pleasing to her, as to many. Of the odour of the leaves, however, there would be but one opinion, for though, while growing, they seem almost scentless, yet, on being crushed, they emit the most nauseous and disgusting scent. This rocket is often found in England, near houses, and on dry banks, or old walls, and heaps of rubbish about towns, and is very plentiful in the suburbs of London. Sir William Hooker and Dr. Arnott mention St. David's, Fifeshire, as a Scottish habitat for it, but add, that it was introduced there among ballast. This plant is by some placed in the genus *Sisymbrium*, and, with other writers, this, and the following species, constitute the British genus *Diplotáxis*.

5. *S. murális* (Sand-rocket).—*Pods* shortly beaked, erect; *stem* herbaceous, spreading, leafy only at the base; *leaves* smooth, and waved. This species is much like the last, but it has a hairy stem, is much smaller, and is annual. It grows on sandy fields, near the sea, chiefly in the south and south-west of England. It is very abundant in cultivated lands in the Isle of Thanet, especially about Ramsgate. Dr. Withering observes of it:—"This weed, which has overrun the whole arable land of the Isle of Thanet, was first remarked, some

twenty years ago, near to the beach at Broadstairs, and is believed to have been introduced on that spot by a corn-laden vessel, wrecked on that part of the coast."

28. Hésperis (Dame's Violet).

1. *H. matronális* (Common Dame's Violet).—*Stem* erect; *leaves* broadly lance-shaped, toothed; *limb of the petals* inversely egg-shaped; *pods* erect. Plant perennial. This is a handsome flower, often cultivated in gardens, and known in old times by the name of Rogue's Gillyflowers. It is occasionally found on hilly pastures in several parts of the kingdom, but has, doubtless, been the outcast of some garden in the neighbourhood. It has purple flowers, fragrant in the evening, from May to July. The French call it *La Julienne;* it is the *Nacht-viole* of the Germans. It was because of the custom of German ladies of placing these flowers in their rooms, that the plant was called Dame's Gillyflower. Queen's Gillyflower was another of its old names. It was also termed Damask Violet.

29. Ráphanus (Radish).

1. *R. Raphanístrum* (Wild Radish).—*Leaves* lyrate, and stalked; *pods* jointed, 1-celled. Plant annual. This wild radish is often called Jointed Charlock, and has much of the general aspect of the wild mustard, though it is readily distinguished by its jointed pods, and pale straw-coloured flowers, veined with purple. These blossoms may be found throughout the summer, and are often white, but occasionally tinged with red. It is a



rough plant, growing in corn-fields, and by road sides. Its roots have the odour of those of the garden radish, but are more pungent; and they are said to be preferable to horse-radish for the table, but when quite young are milder. The leaves were formerly much valued as a pot-herb. This radish grows in cultivated lands throughout Europe, and in wet seasons a great quantity of the plant is found in the barley-fields of Sweden. Its seeds become mingled with the grain, and when ground with the corn and made into barley bread, they were supposed, by Linnæus, to be the cause of a violent and dangerous spasmodic disease, called Raphania, which is an occasional epidemic of Sweden. The plant, however, abounds in our English fields, and in some of the cold moist valleys of Dauphiny is one of the most frequent weeds, yet in neither country is this disease experienced. Professor Burnett thinks that the injurious effect of the plant in some circumstances may be owing to a morbid condition of the seeds, or to the growth of noxious funguses upon them, rather than to anything unwholesome in the seeds themselves; and this would account for the fact that Raphania is an occasional, and not an annual disease; but many writers think that the malady is altogether unconnected with the plant.

The garden radish, that common salad root, is the *Raphanus sativus*. It has several varieties, as the turnip, Spanish, and other well-known radishes. The tree-radish, *Raphanus caudatus*, is remarkable for the length of its pod, which is greater than the whole height of the plant. The young leaves of most of the species are eaten as salads in the lands in which they grow. The

radish is called *Raifort* by the French, *Der Rettig* by the Germans; it is the *Tamme Radys* of the Dutch, and the *Rafans* of the Italians.

2. *R. marítimus* (Sea Radish).—*Leaves* interruptedly lyrate; *pod* jointed, marked with lines and larger than the preceding. Plant biennial. This plant, which grows on sea cliffs, and bears its yellow flowers in June, is very similar to the last species. It is by many writers regarded as a variety only, its chief points of difference being its larger pods, and the form of its leaves, which are composed of small and large leaflets, arranged alternately. It has been found on Beachy Head, and on some parts of the Scottish shores.

Order VII. RESEDACEÆ.—THE ROCKET TRIBE.

Sepals narrow, from four to six in number; *petals* unequal, jagged or fringed at the back; *stamens* as well as the petals inserted on an irregular disc, on one side of the flower; *stigmas* 3, sessile; *ovary* 3-lobed, 1-celled, many-seeded, open at the summit; *seeds* in two rows; *plants* herbaceous, more rarely somewhat shrubby, their flowers being arranged in clusters or spikes, and their leaves alternate. The properties of all are innocuous, and, with the exception of the Dyer's Weed, they are little used for any economical purposes.

1. Reséda (Rocket).—*Calyx* of one piece, many-parted; *petals* entire, or variously cut, unequal; *stamens*



numerous; *capsule* 1-celled, opening at the summit. Name from *resédo*, to "calm," from the supposed sedative effect of some of the plants

1. Reséda (Rocket, Mignonette).

1. *R. Lutéola* (Dyer's Rocket, Yellow Weed, or Weld).—*Leaves* long, narrow and undivided; *calyx* 4-parted; *stigmas* 3. Plant biennial. On chalky inland or sea-side cliffs, or by the road-side, or field borders, this tall, slender species often attracts the eye of the wanderer over the chalky or limestone soil. It is an erect, herbaceous plant, from two to three feet high, its pale yellow greenish flowers, blossoming in July, having very conspicuous stamens, and being succeeded by short flattened capsules. It was, in former times, much used by dyers, and cotton, silk, linen and woollen materials receive a beautiful tint from its juices; while blue cloths dipped in the dye assume a rich green colour. Every portion of the plant is used by the dyer, and to the juices of this yellow weed the artist owes the colour called Dutch pink. This plant is remarked as being one of the first which appear on the rubbish thrown from coal-pits. Linnæus observes of it, that it follows the course of the sun even when obscured by clouds, pointing throughout the day in its direction, turning to the east at the dawn of morning, looking southwards at noonday, saluting the west at sunset, and at midnight standing due north.

2. *R. lútea* (Wild Mignonette).—*Leaves* 3-cleft, lower ones pinnatifid; *calyx* 6-parted; *petals* 6, very

unequal. Plant biennial. This is so much like the Garden Mignonette, the Little Darling of the French, "The Frenchman's Weed," as Cowper calls it, that it would at once be known as a Mignonette by any who are familiar with the scented flower. Its spikes of blossoms, however, have not the pretty reddish tinted stamens of that species, being altogether of yellowish green hue. The odour of the Wild Mignonette, too, is rather unpleasing than agreeable, though it is not powerful. Calder Campbell, in a little poem which he has written for this volume, alludes to this circumstance.

"The flowers we gather in the sun may soothe us in the shade,
As thoughts amid the crowd that spring our lonely hours pervade;
Consoling us for pleasures past by whispering of those
That yet shall crown our honest toils with justly-earn'd repose.

"A book may hold a rose's leaf, preserved for many years,
Whose scents and hues can conjure up sad smiles that turn to tears:
Affection dormant, if not dead, may wake again restored,
By finding faded nosegays in some old neglected hoard.

"When I remember blossoms cull'd in early days of yore,
I seem to smell their fragrance, though I see their blooms no more;
A mem'ry thus oft makes the false, reality assume,
As thoughts of violets with their scents may fill my quiet room.

"Thus wandering o'er the cliffs one day, a wayside plant I saw,
Which from my unaccustom'd lips did joyful welcome draw;
A gush of perfume, at the sight, around me breathed,—but when
I sprang and pluck'd the flowers, ah me! where was the fragrance then?

"'It is the Mignonette,' quoth I; 'yet odour there is none!'
Abundant o'er the chalky hills its blossoms met the sun;
A deeper yellow on them lay than clad my garden flowers,
And yet there was no soothing scent, the semblance only ours.

"O false, but fair, Wild Mignonette! thou art the type of all
Who promise fairly to the eye, but answer not the call
Of such as seek to soothe the sense with sweetness rich and clear,
As wind-harps, wanting air, deny all sweetness to the ear."

Our Wild Mignonette is a common flower during June, July and August, especially on chalky hilly lands. It is more bushy than the Dyer's Weed, and its spikes shorter, thicker, and of a yellower tint, while its oblong, wrinkled capsules are much more like those of the fragrant mignonette. This latter species is a native of Egypt, and is one of the most valued, though one of the most common, of our garden flowers; its sweet odour often greeting us from the city, when the box is placed in the balcony, or when its clusters flourish on some little enclosure. To many a one who passes with hurried footstep, intent on the business of the day, it brings a sweet remembrance of country scenes and summer odours; and its fragrance is borne in by the breeze, perchance, to some who lie on the sick-couch, and tells of gardens far away, and sweet spots of sunshine and flowers.

It is yet scarcely a century since this well-known plant was introduced into this country, but, like the Fuchsia, it so easily accommodated itself to our soil and climate, and became so general a favourite, that no garden is now without it. The famous Tree Mignonette is merely this species rendered shrubby, by preventing the early development of the blossoms. In France, where the plant has been much treated in this way, instances have occurred in which the woody stems have attained an inch in circumference.

3. *R. fruticulósa* (Shrubby Rocket).—*Leaves* all pinnate, waved, glaucous; *calyx* 5-parted, petals 5, 3-cleft, nearly equal. Plant biennial or perennial. This plant is not truly wild, but is occasionally found in waste places in Cornwall, Somersetshire, and other counties, and is planted in gardens. It flowers in June, and may be distinguished by its sea-green tint, and its 5-cleft flowers.

Order VIII. CISTINEÆ.—THE ROCK-ROSE TRIBE.

Sepals 5, the 3 inner ones twisted spirally while in bud; *petals* 5, twisted when in bud, in a direction contrary to the sepals, soon falling off; *stamens* numerous; *ovary* single, 1 or many-celled; *style* and *stigma* simple; *capsule* 3, 5, or rarely 10-valved. The plants of this order are chiefly shrubby, but sometimes herbaceous, with undivided leaves, and yellow, red, purple, or white flowers, which are peculiarly ephemeral in their nature. Many of the species are exceedingly ornamental to gardens, for though falling off after one day's bloom, yet the buds are so thickly crowded on the shrubs, that on the next day the boughs are again covered with a magnificent produce of expanded flowers. Several of the herbaceous species are also planted in clumps on the garden beds. On the rocks of Greece, as well as those of Palestine, the Cistus shrubs are very abundant, and all the genera abound most on dry and elevated spots,



some of them being natives of almost all the countries of the world. The balsam called Ladanum, which is so much used as a perfume in Greece and in oriental countries, and which is prized for its tonic and stomachic properties, is produced by the *Cistus Creticus*. Southey has described the fragrance of the Cistus plants:—

> "The forest or the lonely heath wide spread,
> Where Cistus shrubs sole seen, exhaled at noon
> Their fine balsamic odour all around,
> Strew'd with their blossoms, frail as beautiful,
> The thirsty soil at eve; and when the sun
> Relumed the gladden'd earth, opening anew
> Their stores exuberant, prodigal as frail,
> Whiten'd again the wilderness."

1. Heliánthemum (Rock-rose).—*Sepals* 5, the two outer either smaller or wanting; *petals* 5; *stamens* numerous; *capsule* 3-valved. Named from the Greek *helios*, the sun, and *anthos*, a flower, because the flowers expand in the sunshine.

1. Heliánthemum (Rock-rose).

1. *H. vulgáre* (Common Rock-rose).—*Stem* shrubby, prostrate; *leaves* with fringed stipules, opposite, oblong, green above, hoary beneath; *calyx* of five leaves, the two outer very small and fringed; *seeds* black. Plant perennial. Any one used to roam over the chalky or gravelly soils of this country must have often seen, early in spring and late in autumn, the prostrate branches of this Rock-rose, covered with their leaves. In spring these are of a tender verdant tint; but late in the year they are rigid, of a dark myrtle-colour, and shine with the deepest

green hue on the reddened leaf-stems. When the sunshine of July pours down on the grassy slopes, and tinges their sides with its gleams, these clumps of brilliant yellow flowers are bright, as if the sun had turned them into gold. They are truly, as the ancients called them, Beauties of the Sun, or, as some country people term them, Sun-Roses; never opening save when skies are bright, and never lingering on till the late autumnal season. Their petals are crumpled and fragile, and the little unblown buds are very pretty, standing by thousands as they do among the grass on a cloudy day, waiting for the morrow's sun. The stamens are very sensitive, and if only touched by the wing of an insect or the point of a needle, they all lie down on the petals. They are long before they resume their erect position, and in some cases appear not to do so at all. The bees seem very fond of these flowers, flying from one clump to another, with their deep joyous humming, passing by their favourite wild thyme, to rob the cistus flower, which first invited them; for by some strange instinct, these sagacious insects keep throughout the morning to the same kind of blossom as that from which they first gathered the honey, and never mingle the sweets of the thyme and the cistus.

Many writers on the flowers of Scripture consider that a variety of this Rock-rose is the plant alluded to in the Canticles, as the Rose of Sharon. It does not appear that the Hebrew word, *Chabazzeleth*, which our translators have rendered by "rose," is ever applied to that flower; and as the plains of Sharon are full of the red variety of the Cistus, it is reasonable to suppose that

this may be intended. The subject has been well investigated by learned and judicious botanists; but whether this pretty Cistus, the Asphodel, the true Rose, or the Narcissus, is the flower alluded to, cannot be fully ascertained.

2. *H. cánum* (Hoary Dwarf Rock-rose).—Shrubby, without stipules; *leaves* opposite, egg-shaped or oblong, hoary beneath; *racemes* of flowers terminal. Plant perennial. This very rare plant is truly alpine in its place of growth, and occurs in the north of England and in Wales. Its flowers are small and yellow, blossoming from May till July. The leaves are quite grey with down.

3. *H. guttátum* (Spotted Annual Rock-rose).—*Stem* erect; *leaves* long and narrow, the lower ones opposite and without stipules, the upper ones alternate. This very rare plant has but two recorded British habitats, and both are in Ireland. It flowers from June to September. It is a common species in France, Italy, Portugal, and Turkey; and is found, but rarely, in Jersey. Its flowers are yellow, with a deep-red spot at the base of the petals.

4. *H. ledifólium* (Ledum-leaved Rock-rose).—*Stem* herbaceous, slightly downy, with stipules; *leaves* lance-shaped; *flower-stalks* solitary, opposite to the leaves; *capsule* smooth and shining. Plant perennial. This Cistus was described by Hudson, as growing on Brean Downs, in Somersetshire, but it is probably not a native of Britain.

5. *H. polifólium* (White Rock-rose).—Shrubby, procumbent, stipuled, hoary; *leaves* oblong, more or less

rolled under at the margin; *racemes* solitary, terminal. Plant perennial. This white-flowered Cistus is very rare, and is by many botanists thought to be a variety of the Common Rock-rose, which, as we may see in our gardens, exhibits under culture tints of all hues of red, yellow, and white. This plant has been gathered in several parts of the south of England, as at Torquay, Babbicombe, and other places; and many a botanist of these neighbourhoods goes forth to seek its blossoms in July, reminding one of Wordsworth's words:—

"Happy, in my judgment,
The wandering herbalist, who, clear alike
From vain, and that worse evil, vexing thoughts,
Casts on these uncouth forms a slight regard
Of transitory interest, and peeps round
For some rare flow'ret of the hills, or plant
Of craggy fountain; what he hopes for, wins,
Or learns, at least, that 'tis not to be won:
Then, keen and eager as a fine-nosed hound,
By soul-engrossing instinct driven along
Through wood or open field, the harmless man
Departs intent upon his onward quest!
No flow'ret blooms
Throughout the lofty range of these rough hills,
Or in the woods, that could from him conceal
Its birth-place!"

Order IX. VIOLACEÆ.—THE VIOLET TRIBE.

Sepals 5; *petals* 5, sometimes unequal; *stamens* 5; *anthers* lengthened into a flat membrane; *style* with an oblique hooded stigma; *ovary* 1-celled; *seeds* numerous,



in three rows. This order, which consists chiefly of the Violet genus, contains many favourite flowers of the gardener. The greater number of the tribe are hardy herbaceous plants, some remarkable for their fragrance, others for their beautiful colours; but few are shrubs. They are found in most parts of the world, often occupying very elevated situations; but they are entirely absent from the countries of Tropical Asia. The plants of this order which occur in temperate regions are generally herbaceous, but in South America the species are mostly shrubs. Their medicinal properties are found chiefly in the roots, which appear in all the violets to possess emetic properties, in a greater or less degree. One of the Ipecacuanhas, so valuable as a medicine, is the root of a Brazilian violet; and several of the shrubby *Violaceæ* of Brazil are plants of great interest.

1. Víola (Violet).—*Sepals* 5, extended at the base; *petals* 5, unequal, the lower one lengthened into a hollow spur beneath; *anthers* united into a tube, the two lower ones furnished with spurs, which are enclosed within the spur of the corolla; *capsule* with three valves. *Viola* was the Latin name of some fragrant flower called *Ion* by the Greeks.

1. Víola (Violet).

* *Leaves and flowers all springing directly from the root.*

1. *V. hírta* (Hairy Violet).—*Leaves* heart-shaped, hairy, as are also the *leaf-stalks* and *capsules*; *bracts* below the middle of the flower-stalks; *sepals* obtuse;

lateral *petals* usually with a hairy central line. Plant perennial. This violet, more than any other species, resembles that favourite flower, the sweet-scented wood-violet; but its blue tint is darker and duller, and it has not creeping shoots. The rough hairs which beset the leaf-stalks and leaves, and the total want of the sweet scent of that violet, are also obvious distinctions. It blossoms in April, and is occasionally pale blue or white. It is not unfrequent in English woods and pastures, preferring a chalky or limestone soil, and thriving especially near the sea; but it is a rare plant in Scotland, and found only in Dumfriesshire, and in the eastern parts of the country. The flowers of this, as well as of some other species, are often destitute of petals.

2. *V. odoráta* (Sweet Violet).—*Leaves* heart-shaped, slightly downy, especially beneath; *bracts* above the middle of the flower-stalks; *sepals* obtuse; lateral *petals* with a hairy central line; *scions* creeping. Spring violets! What lover of the country is not gladdened by their coming, and is not willing to search again for their buds among the dark-green leaves, as he did in his childhood? What wonder that poets have made them symbolic of beauty and virtue, from the old Arab bards and the Provençals of later years, and the Eastern minstrel who sings of the violet-tinted eyelid, to him who in our days compares the eye to the violet dropping dew, or the secluded maiden to the

> "Violet by the mossy stone, half hidden from the eye!"

The south wind that came over the bed of violets,—the touching remark of Ophelia, who coloured all nature

with the hues of her own sad thoughts, "I would give you violets, but they withered all when my father died:" these and many another sweet poetic passage, serve to show how men in all ages have prized our spring flower. Which of us could spare the Violet from the memories of early life? And how many of us are even now reminded by its passing scent of scenes which may never be revisited, but whose verdure and sunshine and song made a picture on which the eye of the mind can linger as long as life itself shall last. The Violet is so associated with green meadows speckled over with lambs, and woods made musical with voices of singing birds and softly breathing winds, that many a lover of Nature can respond to the expression of Willis :—

"I have found Violets, April hath come on;
And the cool winds feel softer, and the rain
Falls in the beaded drops of summer-time.
You may hear birds at morning and at even;
The tame dove lingers till the twilight falls,
Cooing upon the eaves, and drawing in
His beautiful bright neck; and from the hills
A murmur, like the roaring of the sea,
Tells the release of waters; and the earth
Sends up a pleasant smell, and the dry leaves
Are lifted by the grass,—and so I know
That Nature with her delicate ear hath heard
The dropping of the velvet foot of Spring.
Smell of my Violets! I found them where
The liquid south stole o'er them, on a bank
That lean'd to running water. There's to me
A daintiness about these early flowers
That touches me like poetry; they blow
With such a simple loveliness among
The common herbs of pasture, and breathe out

Their lives so unobtrusively, like hearts
Whose beatings are too gentle for this world.

"I love to go in the capricious days
Of April, and hunt violets; when the rain
Is in their blue cups trembling, and they nod
So gracefully to the kisses of the wind.
It may be deem'd unmanly, but the wise
Read Nature like the manuscript of Heaven,
And call the flowers its poetry."

The Sweet Violet is rare in Scotland, and is thought by some botanists not to be truly indigenous to that country. It occurs, however, in most of the countries of Europe. The violets of Athens and of Pæstum have had their praises sung by poets, and these flowers still attract the eye of the traveller among the ruins of Rome. Daisies, shepherd's purse, wild marigolds, and other well-known flowers are described as blooming with the violet in the neighbourhood of the Ancient City, as early as the month of January; and the Rev. T. H. White records their beauty and fragrance as still enlivening some spots interesting from their old associations. "The *Via Domitiana*," says this writer, "by which we departed for Baiæ, a hilly road, paved with enormous flag-stones, and bordered by high banks and hedges, owes its principal distinction to a stately arch with walls, niches, and windows, which was evidently one of the gateways of Cumæ, and is now entitled Arco Felici. I confess that my memory lingers around the Arco Felici chiefly on account of the prodigious quantity of violets which I found beneath its walls, of so large a size, of such an intense purple, and exhaling such a perfume, as in England we may look for in vain."

Mr. Lyell tells of his gathering violets among the spring flowers in his ramblings around New Orleans, but he was not attracted by their odour, for American violets are scentless; though our sweet flower, in all its fragrance, blooms beneath the palm-trees in many Eastern lands, and is a native of Barbary, Japan, China, and Arabia. The sweet violets of Palestine blossom with the narcissus and the hyacinth, in the opening month of the year; and at that time, too, the women of Aleppo gather them to adorn their dark tresses. In all Eastern countries the violet is a favourite flower, and a sherbet flavoured with its blossoms is a common drink at the Persian and Arabian banquets. The flower is sold in the modern markets there, as it is in those of Paris or London, and as it was in those of Athens in former years, when people were employed to arrange bouquets for gifts, so as to be expressive of the sentiments of the donor.

In olden times this species was called the March Violet, and it is still the *Margveilchen* of the Germans, and the *Violette de Mars* of the French. Gerarde also calls it Black Violet, perhaps because of its purple hue, or perhaps because Theophrastus having described the violet as black, our herbalists thus distinguished the species which they supposed to be intended by the ancient writers. "They have," he says, "a great prerogative above the other violets, not only because the minde conceiveth a certaine pleasure and recreation by smelling and handling these most odoriferous flowers, but also for that very many by these violets receive ornaments and comely grace; for there be made of

them garlands for the head, nosegaies, and posies, which are delightful to look upon, and pleasant to smell to, speaking nothing of their appropriate virtues; yea, gardens themselves receive by these the greatest ornament of all cheerful beautie and most gallant grace. And the recreation of the minde which is taken thereby cannot but be very good and honest, for they admonish and stir up a man to do that which is comely and honest; for flowers, through their beautie, variety of colour, and exquisite forme, doe bring to a liberal and gentlemanly minde the remembrance of honestie, comelinesse, and all kindes of virtues. For it would be an unseemelie thing for him that doth look upon and handle faire and beautiful things, and who frequenteth and is conversant in faire and beautiful things, to have his minde not faire but filthie and deformed." The old herbalist was right; the love of flowers has a refining and elevating influence, and the flower has so much to tell the listening heart of God's care and goodness in creation, that he is indeed slow to learn the highest lessons, who shall gain no thought of their Maker while looking at them, and whose heart shall never utter the sentiment of Linnæus, "Blessed be God for the green earth!"

Pliny, and our old herbalists, had much to tell of the properties of the violets. The Roman naturalist said, that their odour cured headache, and that great healing virtues existed both in leaf and flower. In modern practice, a syrup of sweet violets is occasionally given to children, and the tincture of the flowers is a useful chemical test, uncombined acids changing the blue to red, and alkalies to green. By some botanists the

flowers are considered anodyne in properties. Professor Lindley says, "They certainly induce faintness and giddiness in particular constitutions, as I have witnessed. Triller mentions a case in which they produced apoplexy." But peculiar effects are produced by the odour of other flowers besides violets, the rose even not excepted.

The violet has ever been prized as an old English flower; and we find the "cool violet," as Spenser calls it, named in the list of those which were present in all the old floral usages. Thus, in Dr. Roger Hacket's celebrated sermon, entitled "A Marriage Present," the author introduces as flowers fitted to be used at weddings, violets, and the roses called Maiden's Blushes, though the rosemary was praised beyond them all, as "medicinable for the head, and well affecting the heart," an opinion which poets of the day fully declared to be general. From Googe's translation of that old work, "The Popish Kingdom," we find that the violet was among the flowers used in the old ceremony called "Creeping to the Crosse," when on Good Friday, priests, clad in crimson, and "singing dolefully," carried the image of the cross, accompanied by another image, representing a person just dead.

"With tapers all the people come,
And at the barriers stay,
Where down upon their knees they fall,
And night and day they pray;
And violets, and ev'ry kind
Of flowers about the grave
They strawe, and bring in all
The presents that they have."

The Abbot Necham gives us his idea of a "noble

garden," which he says should be arranged with roses, lilies, sunflowers, violets, and poppies; he mentions, also, the narcissus. Mr. Macaulay, in his paper on the "Flower Gardens of the Ancients," remarks:—"The Athenians always had flower-gardens attached to their country houses. One of those which Anacharsis visited he thus describes: 'After having crossed a court-yard full of fowls and other domestic birds, we visited the stables, sheep-folds, and likewise the flower-gardens, in which we successively saw bloom narcissuses, hyacinths, irises, violets of different colours, roses of various species, and all kinds of different plants.' " The violet was, in early times, in our country, regarded as an emblem of constancy. Thus an old poem says—

"Violet is for faithfulnesse,
Which in me shall abide;
Hoping, likewise, that from your heart
You will not let it slide."

The Troubadours classed it with the wallflower, as an emblem of this virtue. Their prize of a golden violet, awarded to the best versifier, proves, too, how much the flower was esteemed by them.

This violet, though usually of very dark blue, yet is sometimes found of pale lilac. White sweet violets are very common; and the Rev. W. T. Bree found this flower of a red colour at Castle-hill, Allersley, and on the mount of Warwick Castle. Botanists have also found the red violet in other countries. We used in childhood to think the white blossoms more fragrant than the blue ones, and they probably are so. Mr. Knapp, in his "Journal of a Naturalist," mentions a

pretty practice of country children with these flowers. "We have," he says, "our daisies strung and wreathed about our dress, our coronals of orchises and primroses, and our cowslip balls; and one application of flowers at this season I have noticed, which though, perhaps, it is local, has a remarkably pretty effect, forming, for the time, one of the gayest little shrubs that can be seen. A small branch or long spray of the whitethorn, with all its spines uninjured, is selected, and on these its alternate thorns, a white and a blue violet, plucked from their stalks, are stuck upright in succession, until the thorns are covered; and when placed in a flowerpot full of moss, has perfectly the appearance of a beautiful vernal-flowering dwarf shrub, and as long as it remains fresh, is an object of surprise and delight."

3. *V. palústris* (Marsh Violet).—*Leaves* heart-shaped, or kidney-shaped, quite smooth; *sepals* obtuse; *spur* very short; *root* creeping; *scions* none. Plant perennial. This little flower is like the other violets in form, but it is much paler in colour than most of the species, being of a light grey lilac tint, marked with darker veins. It is in flower from April to June, among the large mosses of the bogs, or sometimes, as in the neighbourhood of Clifton, in shady moist lanes. Its stalks are short, and its leaves of pale green, often tinted with purple on the under side. It is less frequent in the south than the north of England, but is very abundant in Scotland, where it sometimes grows even at a considerable elevation. It is usually described as scentless, but, in some instances, it has the odour of the sweet violet, though not quite so powerful.

** *Furnished with an evident stem.*

4. *V. canina* (Dog Violet).—*Stem* channelled, leafy, ascending; *leaves* heart-shaped, and pointed; *sepals* acute; *stipules* long, toothed, and fringed; *bracts* awl-shaped, entire. Plant perennial. This species, unlike the scented violet, is not hidden among the leaves, but stands up on longer stalks, where it may be easily seen. It is usually more abundant than the sweet violet, in woods, hedges, and the borders of pastures, and it remains longer in bloom than most of the species, coming with the sweet violet, in April, and continuing till July. It is the largest of our native violets, and, notwithstanding that it is scentless, it is very lovely in its pale blue lilac tint, sometimes in its profusion giving its own peculiar colour to some sunny bank. We have gathered these violets from the woods of Kent, with the flower twice the size of the scented species, standing on a stalk seven inches high, though the common height is about five inches; and we have thought that it merited some better name than that of Dog Violet, given in a contemptuous spirit, doubtless, because it lacked perfume. The leaves are small and thin, pale green, on long stalks. The flower is easily known from the fragrant species by its look of airiness and grace, and when growing high up in the clefts of rocks, as it sometimes does, it is very attractive. It had an old repute as a medicine in cutaneous disorders, and modern practitioners consider this as not wholly unmerited. In common with all the species of violet, it has the power of throwing its seeds to a distance; and

any one who in early summer will gather these capsules and place them in the sunshine, may see the mode in which the dispersion of the seed is effected. The capsule consists of one cell, which is full of seeds, and which is formed of three valves. The seeds are attached to the inner part of each of these valves, and the parchment-like covering bursts open as it ripens into three divisions, exposing to view the closely arranged glossy seeds on each valve. The atmosphere soon shrivels these portions of the capsule, when the edge of the valve presses upon the polished oval seeds, gradually working its way over their smooth surface till it suddenly detaches them, and they are jerked off to a considerable distance. The capsule of the violet, after ripening, stands upright on the stalk. "This upright position," says a writer in the "Magazine of Natural History," speaking of it as occurring in the scented violet, "appears to be intended by Nature to give more effect to the valvular mechanism for scattering the seeds, as it thus gains a higher elevation, in some cases more than an inch, from which to project them; and this will give it, according to the laws of projectiles, a very considerable increase of horizontal extent." A smaller variety of the dog violet is sometimes called *Víola púmila;* it has paler, or even white flowers, and thicker leaves, and grows on heaths, or other open places.

5. *V. láctea* (Cream-coloured Violet).—*Stem* divided into procumbent or sub-erect flowering branches; *leaves* egg-shaped, scarcely heart-shaped at the base; *sepals* pointed. Plant perennial. This violet grows on mountains, and is not unfrequent on boggy heaths in England.

It has also been found, though rarely, in Scotland and Ireland. Its flowers appear in May, and are pale blue or white. It is by many botanists considered to be but a variety of the dog violet.

6. *V. tricolor* (Pansy Violet, or Heartsease).—*Stem* angular, branched; *leaves* oblong, crenate; *stipules* deeply cut; terminal lobe broad, crenate. Plant generally annual. This, and the following species, are the only representatives in our fields of the Pansy, that beautiful velvet-like flower, which has so many varieties in the garden. Most of our garden pansies, as well as many of the cultivated violets, have been brought from the South of Europe, though several come from colder countries; and, in many cases, are so altered by the management of the gardener, as to be very different from their condition when wild. Few flowers have received more attention from florists, or more praises from the old poets, than the pansy, which is called by the latter, *Pensée, Pauncé,* or Pansie, as well as by its old familiar names, still used in country places, of Kit-run-the-street, and Heartsease. That it was an acknowledged symbol of remembrance we know from Shakspeare, Spenser, and the poets of those days; and Chapman too, who wrote in 1605, says,—

> "What flowers are these?
> The Pansie this;
> Oh! that's for lover's thoughts."

But our field pansy the poets have not regarded, and it is little noticed save by botanists and country children, and by the farmer, who calls it a troublesome weed. It grows on a stem about half a foot high, and bears its

flowers throughout the summer. These are usually of a pale yellowish hue, or cream colour, but they are sometimes veined, or more or less tinged, with purple, and the calyx of the buds is usually purplish. The flower, when bruised, has a faint scent of peach kernels, an odour which is more powerful in the cultivated kinds, and which is communicated to water in which the heartsease is distilled. This fragrance, like that of the Meadow-sweet and the Hawthorn, seems to indicate the presence of prussic acid in the plant

7. *V. lútea* (Yellow Mountain-violet, or Heartsease). —*Stem* angular, branched chiefly at the base; *leaves* oblong, crenate; *stipules* deeply cut; terminal lobe narrow, entire. Plant perennial. This pansy, which flowers in June, on mountainous pastures, is much like the last; but its flowers, which are variable in size, are usually much larger. Though it is distinguished as the yellow violet, the petals are often of a deep purple. A number of garden violets are known by the general name of *V. lútea*, on account of their colour. Many of these are very pretty. The species called Veitch's yellow violet, which was raised by the Messrs. Veitch from seeds sent from the inhospitable shores of Patagonia, is a very beautiful kind; it was first discovered growing wild about the Straits of Magellan. It is of a very bright yellow.

Order X. DROSERACEÆ.—SUNDEWS.

Sepals 5, equal; *petals* 5; *stamens* distinct, either equal in number to the petals, or 2, 3, or 4 times as many; *ovary* single; *styles* 3—5, often 2-cleft or branched; *capsule* of 1—3 cells and 3 or 5 valves, which bear the seeds at the middle or at the base. This is a small Order. The plants composing it are, in one or two instances, shrubby, but the British species are all herbaceous. The leaves are alternate, and, when young, are rolled up in the same manner as the young fronds of ferns. These plants are natives of bogs, marshes, and inundated lands, in all the temperate regions of the world, and are remarkable for the abundance of glandular hairs, which cover all parts of the foliage. They possess an acrid principle, but their medical properties are not of much power.

1. Drósera (Sundew).—*Sepals* 5; *petals* 5; *stamens* 5; *styles* 3—5, deeply cleft; *capsule* 1-celled, 3—5-valved. Name from the Greek, *drosys*, dew, the leaves being covered with drops which, during sunshine, look like dew.

1. Drósera (Sundew).

1. *D. rotundifolia* (Round-leaved Sundew).—*Leaves* all from the root, spreading around in a horizontal direction; *leaf-stalks* hairy; *seeds* chaffy. Plant perennial. It is not all lovers of wild flowers who have an opportunity of seeing the sundew, for it is not to be found on every bog. Still fewer are they who may look on it when fully expanded, for, from some circumstances unknown to



botanists, and apparently, no way dependent on the shining of the sun, this flower often remains closed during the greater part of its flowering season, which is in July and August. So much is this the case, that the author of these pages had long watched it without seeing the white petals fully open, until the doubt had arisen whether they ever opened at all. Many who have observed this plant have thought so too, and believed that the half-opened buds, gracefully curving downwards from the top of the stalk, were its perfect condition. A writer in "Loudon's Magazine of Natural History," in 1831, made some inquiry respecting this plant, which soon elicited answers from various observers of flowers, proving that many had been perplexed by the Sundew. "Has any person," wrote one inquirer, "ever seen the blossoms of the Round-leaved Sundew fully expanded? It is so represented in the 'Encyclopædia of Plants,' but in such a state it has never fallen under my observation. Wishing to obtain a specimen of this little plant with its flowers in full bloom, to sketch from, I have visited, at almost every hour of the day, a bog traversed by a small rivulet, whose margin is thickly dotted with its glowing leaves, looking as if they had, indeed, impaled drops of the morning-dew to cool them through the day. I have watched it from the time in which its slender scape first rises from amidst a bunch of circinate leaves, to that in which it forms at top into a nodding raceme; but never have I seen its minute white flower-buds unclose. They would always appear as if about to open, and so lead me on to this hope, until the gradual enlargement of the seed vessel within them warned me to give up the

expectation. Does this pretty lover at once of an exposed and moist situation, then, never expand its flower, or does it open for a short time at sunrise, or when it is hidden beneath the soft twilight of a summer night?" So wrote one who had evidently well observed the plant, and various answers were given. Linnæus had said that the blossom opens in the morning, and shuts at noon, and a correspondent who had gathered the Sundew often from a moor near Richmond, in Yorkshire, and elsewhere, confirmed the truth of the statement of the great botanist. Having been much disappointed at never seeing the flower expanded, this writer had at length transferred from the bog into pots in his garden, some plants of the *Drosera rotundifolia*, and on the 6th of July, at half-past ten in the morning, perceived that a single flower had fully expanded; this closed at one o'clock, as did also four other flowers which opened on the following day. On the other hand, several correspondents added, that although this Sundew opened only at those hours, yet even in the fairest weather and sunshine it often continued closed at the time at which it might have been expected to open.

The writer first alluded to adds, that the divisions of the calyx, when examined through a microscope, appear extremely cellular, like the leaves and capsules of mosses; he also suspects that each blossom expands but once, and that only during sunshine. It is no wonder, therefore, that Gerarde and our old herbalists always in their engravings represented the flower in its drooping, unfolded condition. It is, however, sometimes to be seen open on its native bog, early in the day, as

well as when gathered and transferred to the house, as the author of this volume found with great delight, after long watching for the flower; and the Rev. W. T. Bree also records the pleasure which he experienced at seeing the white unfolded stars in large quantities on a bog, which he had known from boyhood, and yet on which he had never, in the course of former years, seen the fully expanded blossoms.

This species is from three to six inches high, and the numerous red hairs on its leaves are thickly besprinkled with the clammy drops, so like the dew, save that it is not exhaled by the sun. It well deserves its old name of *Ros-solis*, as well as our English synonym. The plant grows in such spots as the poet has described :—

"The streamlet makes in winding nooks
Clear pools all gaily laced with green:
The sagittaria's foliage looks
Like arrows of some nymph unseen;
'Midst which, white blossoms bloom around,
While up the margin quaint and rude
Horsetails, with branches whorled, abound,
And hispid comfrey eyes the flood.

"Beyond, the moorland has its wealth
Of pink and purple, blue and gold;
Heather and gorse, whose breath gives health,
And ling, a hive of bees that hold:—
And when there's moisture in the brake,
The clammy sundew's glistening glands
'Mid carmine foliage boldly make
Slaves of invading insect bands."

That the foliage of the Sundew makes captive many a gauzy-winged insect, no one can doubt who has seen how its leaves are disfigured by their dead remains.

The beauty of some other of our wild plants is also destroyed in this manner. Several kinds of vegetable fly-traps may be enumerated. These are, first, such as entrap insects by the irritability of their stamens, which close immediately on touching them. Of this kind our British flowers afford no example, for although the Berberry, the Pellitory of the Wall, and the Rock-rose, have very sensitive stamens, yet an insect must be very minute to be caught by them; nor do we ever see on them the remains of insects thus entrapped. The stamens of the Virginian Swallow-wort, the odoriferous and beautiful flowers of which delight the traveller in the Canadian woods; the Tutsan-leaved Dog's-bane of North America; and the common Oleander, which blooms in so great abundance by the streams of Palestine as to have led to the opinion of some writers that it is the willow of Scripture,—are enumerated by Dr. Barton as possessing this power. So great a fly-trap are the flowers of the Virginian Swallow-wort, *Asclepias Syriacus*, that a prodigious number of insects are destroyed by it, since it is scarcely possible to find a blossom which has not entrapped its victims; and in the United States whole acres of ground are sometimes covered with these flowers.

Another kind of vegetable trap comprises such plants as, being invested with a clammy substance, hold the insects attracted by it so closely as to prevent escape. Both our wild and garden flowers present instances of this kind. Such is the Red German Catchfly (*Lychnis Viscaria*), found wild in a few places of Scotland and Wales; and such are several of our wild species of

Siléné, commonly known by the name of Catchfly, the stems of which are sometimes crowded in summer with small black insects. The Rhododendrons, the Kalmias, and the Robinias of the garden, are traps of this description; and such too is the Purple Loosestrife, which makes many of our river-sides gay with its tall crimson flowers. That well-known tree, the Tacmahac Poplar (*Populus balsamifera*), has its buds from autumn till the leafing season so covered with its glutinous yellow resin, that the latest insects of summer and the earliest of spring are often ensnared.

Then there are plants which entrap thirsty insects, and drown them in the water held by their leaves. The *Urania speciosa* is called by the Dutch the Water-tree, on account of the great quantity of water which flows from its stem, or leaf-stalk, when cut across. Mayen says that he has seen a plant of this kind which every day secreted from a single sheath of flowers more than a quart of water, which was so sweet that it was like liquid honey, in which thousands of insects found their death. The Tree-pine (*Tillandsia*) forms little reservoirs in the hollow of its leaves, in which insects and tree-frogs are continually drowned, while the thirsty traveller is glad of even this refreshment in the dreary places where it grows.

In some of the vegetable traps of this kind an odour of carrion, suggesting to the winged wayfarer an idea of food, serves as an additional inducement. Such is the nature of those singular plants termed Side-saddle Flowers, which attract insects by their scent of decayed animal substance, and which finally drown them in the

water held by their leaves. The celebrated Pitcher-plant invites many a bright-winged fly by the clear pools secreted by its vase-like leaves, and numbers of little creatures perish in the too eager draught. Few of our native plants belong to a class which can be said to drown their victims; and the only remarkable one is the Teasel, whose large leaves form a kind of hollow basin, which retains the clear drops of rain and dew, in a little crystal pool, in which we have often seen thirsty flies struggling for life, or leaving their black remains to float in the water.

Another class of vegetable fly-traps are those whose leaves or flowers close over the insects, so as to prevent escape. Something of this kind are our native Snapdragons, whose blossoms often shut up unwary little creatures, as in a prison; but the contrivance for their detention there is not so apparent as in the *Aristolochias* of the greenhouse. This is most singular in the Sea-green Birthwort (*Aristolochia glauca*). The whole internal surface of this tubular flower is beset with very small spines, pointing downwards; at the base of the blossom is a sweet juice, and the insect in search of the nectar finds no difficulty in descending the tube. But its exit from this flowery tunnel is quite another matter. The delicate creature is met at its return by the inverted spines, and its little wings are torn in attempting to pass them. The flower, too, makes a remarkable curve, bending up like a horn, so that the insect is beaten back by striking against this spiny roof, and falls down in helpless despair, to be drowned in the nectar at the base.

None of these fly-traps, however, has so strong a similarity to the construction of our Sundews, as one well-known as the Virginian Fly-trap (*Dionæa muscicapa*), a plant of Carolina, and whose name has its synonym in all countries. The leaves of this plant are set round with sharp firm spines, which enclose the intruder as in a steel trap, and effectually prevents its escape; and they are said, by Ellis, to grasp as closely a needle, a straw, or other small substance which touches them. Our sundews are considered by many botanists as having a somewhat similar apparatus; but there are others who believe that the insect which is attracted by the viscous fluid on the tips of the hairs is merely retained there by its glutinous nature, and not by any irritability of the hairs themselves. "Loudon's Magazine of Natural History," which a few years since afforded a good medium by which naturalists in all parts of the country might communicate to each other and the public the result of their observations, published many comments on this subject, some of which we shall present to the reader.

A writer who had evidently given very careful attention to the Sundew, declared his belief that the power possessed by the leaf of retaining insects was to be attributed solely to the clammy juice exuding from the extremities of the hairs. "When touched with the finger," says this writer, "this moisture is so viscid, that it will draw out into threads of more than an inch in length; and it is not likely that an insect, once touching a leaf, and becoming entangled, as it were, amidst the globules, should ever be able to effect its escape. In fact, as I have seen, by placing a minute fly on the

surface of a leaf, every struggle, by rendering the parts of the body more clammy with the moisture, does but make its extrication more difficult. In respect to the hairs themselves, I did not observe anything like movement, or a spontaneous attempt to capture their prey." This was the opinion of a naturalist who, during the course of one whole month, examined the Round-leaved Sundew; but the same writer, in a subsequent number of the Magazine, very candidly retracted it. He said that further study of the plant had shown him, that when an unfortunate insect had entangled itself in the clammy juice of a fresh leaf of Sundew, the hairs gradually close upon their victim, and the edges of the leaf itself curl inwards, remaining so, long after the captive has died. Slowly unclosing at length, they discover its remains, and the leaf loses much of its healthful appearance for a time. He adds, that he has seen a fly, much like a common house-fly, captured by one of these leaves, and held fast until the relaxing hairs exhibited its blackened remains. Mr. William Thomson of Manchester, who afterwards communicated his observations, made in June 1832, says that he can safely affirm that the three species of Sundew, *rotundifolia*, *longifolia*, and *Anglica*, have the irritability ascribed to them as surely as has the leaf of the far-famed Venus's Fly-trap. He adds, that it is quite possible that the little drops of liquid which stud the tips of the hairs may be powerfully instrumental in detaining the venturous insect, and that they may be poisonous to it. He says, however, that, according to his observation, "when an unfortunate fly has got into the centre of a leaf of *Drosera*, every hair

turns inward, and remains curled in till the prisoner is not only dead, but entirely consumed; and then the disk, which was before extremely contracted and cone-like, expands to its fullest breadth, and the hairs become fully erect." He observes, that the leaf of *Drosera Anglica*, when a fly settles on it, becomes rolled up, and remains in this scroll-like form till the animal is dead.

Accustomed as we are, when examining Nature, to see everywhere around us the wondrous exhibition of God's goodness—to behold in the great and the minute, continued evidences of beneficence, we naturally inquire for what purpose the great Creator designed the vegetable insect-traps? We may not be able to answer such questions fully, for the works of the Infinite may not always be understood by the finite mind; yet various reasons may be suggested. Some have thought that the decomposition of the insect may afford stimulant to the plants; yet, growing, as the Sundew does, on the boggy soil, it would scarcely seem to need this. The experiments made by Mr. Knight on the subject have sometimes excited a smile, but Mr. Knight has been an intelligent observer of plants, and his opinion deserves some attention. This observer laid some fine threads of raw beef as an animal manure on the leaves of the Sundew, and he considered that the plants so treated were much more luxuriant in their growth than others. It is not impossible that the air evolved from the putrefying insects, which, as in the case of the Purple Side-saddle flower, is sometimes so powerful as to scent the atmosphere, may, in a similar manner, be favourable to

the vegetation of our Sundews; but, perhaps, the best reason to be assigned for its fatal power over the insect race would be, that it is in accordance with that law reigning throughout Nature, by which one kind of created things preys upon another, thus keeping the number of all within due limits, and preventing any serious departure to be made from that variety which gives to the earth one of its greatest charms.

The juice of the round-leaved, as well as of the other species of Sundew, is very acrid; sufficiently caustic, indeed, to erode the skin; yet, when diluted with milk, it makes one of the best vegetable cosmetics; it also curdles milk. In its fresh state the juice is used by country people to destroy warts and corns. The plant is in some places called Red-Rot, because it is supposed to cause some maladies in sheep feeding on it. The pastures where it abounds would, from their moist nature, be unfavourable to the health of sheep, but the plant itself may probably merit the disfavour of the shepherd, as Professor Lindley mentions a Brazilian species which is considered poisonous to cattle. The celebrated *aqua rosæ solis*, called also *rosala*, or spirit of sundew, and which was highly praised by old writers as a remedy for convulsions, and even for the plague, was made from this plant. The juice of the Sundew distilled with wine affords a very stimulating spirit, and, spiced and sweetened, it was formerly much used as a tincture. The French call the plant *Le Rossolis;* it is *Der Sonnethau* of the Germans; and the *Zonnedaauw* of the Dutch; while the Italians term it *Rugiada del Sole.* It turns black in drying for the herbarium, but tinges

the paper in which it is kept with a red hue. Dr. Lindley remarks, that some of the Swan River species of *Drosera* might perhaps be turned to account by dyers, for every part of *Drosera gigantéa* stains paper of a deep purple, and when treated with ammonia, yields a clear yellow.

2. *D. longifólia* (Spathulate-leaved Sundew).—*Leaves* all from the root, erect, oblong, broad at the upper part, and tapering towards the base; *leaf-stalks* smooth; *seeds* with a rough, not chaffy coat. Plant perennial. This Sundew sometimes grows in the bogs with the round-leaved species, but it is less frequent, and is altogether a smaller plant. It is more abundant in the south than the north of England, and, like the other species, its leaves are frequently darkened with the remains of insects. Its flowers are white, and it blossoms in July and August.

We never see this plant without recalling the anecdote of the little Swedish naturalist, Pyppon. This narrative is pleasantly told by Dr. E. D. Clarke, in his voluminous "Travels"—travels so interesting in their details, that we remember in childhood closing the twelfth volume with a sigh that there were not twelve more to follow. This little Pyppon was a barefooted boy, who, at the time of this traveller's visit to Sweden, was apprenticed to an apothecary. His love for natural history was so great, that he rose daily at three o'clock in the morning to ramble over the country in search of plants and insects, hiding them in his hat lest they should be seen by his master. The apothecary thought, perhaps with some reason, that these pursuits might prevent him from giving due attention to the business

of the shop, and therefore he opposed them angrily. As it often happens, however, enthusiasm is the secret of success; and the ardent young naturalist had searched the neighbourhood so well, that he knew the habitat of every plant which grew in it. Dr. Clarke told this boy that he had been looking in vain for some specimens of the Siberian sowthistle, which was said to grow near the town; and he had scarcely uttered the word, when the young enthusiast dashed from the spot, and, running as fast as possible, soon returned with the plant in his hand. Many a happy hour was spent by young Pyppon with his new friend, who purchased various articles from the shop that the boy might have to bring them, and who, at length, succeeded in persuading his master to allow more scope to his favourite pursuits. One long and happy day was granted, in which Pyppon was permitted to accompany Dr. Clarke to Tornea, and the parting was at last very bitter to the hitherto friendless boy. When the traveller asked him what he should send him as a gift from England, he replied with characteristic simplicity, and with eyes filled with tears, "If you should remember me when you arrive in your country, send me *Drosera longifolia;* I am told it is a common plant in England."

3. *D. Ánglica* (Great Sundew).—*Leaves* all from the root, erect, oblong, on very smooth stalks; *seeds* with a loose chaffy coat. Plant perennial. This is the rarest species, growing, like the others, in boggy places. Its leaves are long and narrow, and Sir William Hooker and Dr. Arnott remark, that this plant would better than the last deserve the name of *longifolia*. It occurs

in some parts of Scotland, and in Lancashire, Norfolk, Devonshire, and some other English counties.

Order XI. POLYGALEÆ.—THE MILKWORT TRIBE.

Sepals 5, unequal, the two inner larger, generally petal-like; *petals* 3—5, unequal, more or less combined with the filaments; *stamens* 8, in two equal parcels; *anthers* 1-celled, opening by pores at the summit; *pistil* 1; *capsule* 1—3-celled; *seeds* pendulous. This Order, though possessing but one genus of British plants, has many exotic genera, several of which are well worthy the attention of the gardener. They are either herbaceous or shrubby, and some are remarkable for their beauty or neatness, and others for their medicinal properties. Several of them are very small. Our native species is not a large plant, and dwarf specimens of the Purple Milkwort of North America are frequently not more than an inch high. The shrubby species vary from humble rigid plants to tall, graceful, drooping ones. The leaves are generally bitter and astringent, and the roots, which are especially so, are also acrid, and somewhat resinous in flavour. Our British Milkwort has these properties, but the species most remarkable for them is the North American Snake-root. (*Polygala Senega*), which has been highly extolled as a medicine by some practitioners. The well-known Rhatany root of Chili is the root of a plant of this order, and possesses

tonic and astringent properties. According to the analysis of a French chemist, it contains gallic acid, but neither tannin nor resin.

1. Polýgala (Milkwort).—*Sepals* 5, the two inner coloured, wing-shaped; *petals* combined with the filaments, the lower one keeled; *capsule* flattened, 2-celled, 2-valved; *seeds* downy, crested at the base. Name from the Greek, signifying much milk, the juice of the root being milky.

1. Polýgala (Milkwort).

1. *P. vulgáris* (Common Milkwort).—*Lower petal* crested in a star-like manner; wings of the *calyx* about equal in length to the corolla; *bracts* three at the base of each flower; *stems* simple, ascending; *leaves* narrow; *branches* procumbent. Plant perennial. Those who are accustomed, during May and June, to wander in the country where the soil is of chalk, and where hilly pastures and open heaths abound, well know this pretty flower. Its tufted stems, copiously furnished with dark-green leaves, and terminated by spikes of purple, pale blue, lilac, or purplish red flowers, are very ornamental. The blossom of the Milkwort is very singular, and often puzzles the inexperienced botanist by its general aspect of resemblance to the butterfly-shaped flowers which belong to the *Leguminous* Order; but it is rather the calyx than the corolla which is, in this case, butterfly-shaped. One of its old names was Hedge-hyssop; the French term it *Le Polygale*, the Germans *Kreuzblume*, the Dutch *Kruisbloem;* and it is



the *Polygala* of the Italian and Spaniard. But its old English names of Rogation Flower, Gang Flower, and Procession Flower, invest this plant with a degree of interest, by reminding us of the ancient usages with which it was connected. Rogation Sunday was the beginning of a week during every day of which it was customary to offer prayers against plagues, fires, and wild beasts. Hence the whole week was termed Rogation week, and as the bounds of the parish were traversed on one of the days, it was termed also Gang week. On this day the bishop of the diocese, or one of the clergy, walked around these limits, accompanied by the churchwardens and parishioners, many carrying garlands of flowers; after which the whole company went into the fields, and implored that God would avert pestilence, tempest, and other ills. Mention of these processions and litanies occurs as early as the year 550 of the Christian era, and remains of them yet exist in the custom of walking in procession around the bounds of the parish on one day of Rogation week. George Herbert spoke of this practice as a pious and thanksgiving custom; and George Withers praises it, too, as he says,—

> "That every man might keepe his own possession,
> Our fathers used a reverend procession,
> With zealous prayers, and with praiseful cheere,
> To walk their parish limits once a yeare;
> And well-known markes, with sacrilegious hands
> Now cut or breake, so border'd out their landes,
> That every one distinctly knewe his owne,
> And many brawles now rife were then unknowne."

In Queen Elizabeth's time, the 103rd Psalm was

usually sung on these occasions; and Izaak Walton tells how the pious Hooker took these opportunities to "drop some loving observations, and to express some pleasant discourse with his parishioners." There was something very beautiful and touching in these processions, and they seemed a natural and thankful way of pouring out the praises of a glad heart to God in the midst of His works; but like so many other customs of those days, innocent and even laudable in themselves, they soon became perverted to seasons of revelry. That such was the case with Rogation ceremonies, both the old poems and sermons of those days abundantly prove. In one of the latter, the preacher exclaims, "Alacke for pitie, these solemn and accustomable processions be nowe growen into a right foule and detestable abuse; so that the most part of men and women do come forth rather to set out and shew themselves, and to passe the time with vayne and unprofitable tales and merrie fables, than to make generall supplications and prayers to God for their lacks and necessities."

Our Milkwort seems in those days to have been generally recognised as a proper adornment to the garland carried on these occasions; for Bishop Kennet in naming it says, "Gang-flower, Rogation-flower; a sort of flower in prime at Rogation week, of which the maids make garlands, and use them in these solemn processions." Gerarde speaks also of its being used at this time, and says, "It serveth well to the decking up of houses and banquetting-rooms, for places of pleasure, and for beautifying of streets in the Crosse or Gang-week, and such like."

Shaw, in his "History of Staffordshire," speaking of Wolverhampton, says, "Many of the older inhabitants can well remember when the sacrist, resident prebendaries, and members of the choir, assembled at Morning Prayer, on Monday and Tuesday in Rogation week, with the charity children, bearing long poles clothed with all kinds of flowers then in season, and which were afterwards carried through the streets of the town with much solemnity; the clergy, singing men and boys, dressed in their sacred vestments, closing the procession, and chanting in a grave and appropriate melody, the Canticle, 'Benedicite opera,' &c."

This ceremony is said by Sir Henry Ellis to be of high antiquity, its origin having been, probably, the Roman offerings of the Primitiæ. Like many other Pagan ceremonies, it was adapted by the early Christians to a purer worship. It was discontinued about a century since. M. Chateaubriand, in his "Beauties of Christianity," gives a most glowing description of the manner in which it is still observed in some parts of France.

Our Milkwort is little heeded now by any but the lovers of wild flowers; but few of these would pass it without a thought of praise for its beauty, as they see it among the short grass of the hill-side, where it

"Purples all the ground with vernal flowers."

Mr. Lyell speaks of the beauty of the *Polygala parviflora*, in Virginia, where it contrasted with the pale anemone; and Backhouse mentions a plant similar to our Milkwort, with the bright-blue flowers of which one

of the people of Australia decked the hat of the Commandant, mingling it with the flexible branches of the twining *Comesperma*.

The Common Milkwort is the only British species; but many very handsome *Polygalas* are brought us from other lands, and some continue in flower in the greenhouse throughout the winter. In Arabia, Brazil, China, Java, and several countries, various species are highly prized. In our native kind of Milkwort, the somewhat creamy substance which exists in the root is bitter and slightly astringent; but the *Polygala venenata* of Java is said to possess very powerful properties. Commerson states that when he touched a leaf of this plant with the end of one of his fingers, he was seized with long and violent sneezings, and an oppressive faintness. His guide cautiously avoided coming in contact with it, and the Javanese generally have great dread of its poisonous effects.

Some botanists consider that a variety of the Milkwort, growing in our chalk districts, should be considered as a distinct species, and it has been called Chalk Milkwort (*Polygala calcárea*). It blooms earlier in the year than the ordinary form of the plant, and its lowest leaves are the largest. Other writers have termed our species *Polygala oxyptera*, *P. amára*, or *P. depressa*.

Order XII. FRANKENIACEÆ.—SEA-HEATHS.

Sepals 4—5, united into a furrowed tube; *petals* of the same number as the sepals, furnished with claws, having usually scales at the point of union of the claw with the limb; *stamens* equal in number to the petals; *ovary* 1; *style* very slender, 2, 3, or 4-cleft; *capsule* 1-celled, 2, 3, or 4-valved; *seeds* very small, attached to the edges of the valves. The inflorescence is terminal, or seated in the angle formed by the leaf and the stem. When terminal it is in a cluster; when axillary, the flower is solitary.

1. Frankénia (Sea-Heath).—*Style* 3-cleft; *lobes* oblong, with the stigma on their inner side; *capsule* 3—4-valved. Name from John Franken, who first enumerated the plants of Sweden, and who died in 1661.

1. Frankénia (Sea-Heath).

1. *F. lævis* (Smooth Sea-heath.)—*Leaves* narrow, rolled back at the margin, smooth, fringed at the base. Plant perennial. We shall not easily forget the appearance of the salt marsh on which for the first time we discovered this rare flower. On many a marsh and chalky cliff had we long searched in vain for the Sea-heath, and the botanist will appreciate the pleasure which the first sight of the plant afforded. It was a bright day, early in September, when we visited Shellness, a sandy margin of the sea, about four miles from Ramsgate, and the way to which lies over a wide,

grassy, marshy flat, dreary enough in general appearance, but affording to the botanist a wealth of plants peculiar to the saline soil. The sands were brown with the dried remnants of the tall sea-side grasses; and the sharp triangular leaf of the Salt-marsh Club-rush (*Scirpus marítimus*) seemed well to defend the brown bristly clusters which grew at the top of its tall stem; while the less frequent, but dark and glossy clusters of the Great Sharp Sea-rush (*Juncus acutus*), stood up in leafless hardihood, among the barren scapes which looked like leaves. A carpet of flowers was at our feet, for the Thrift, with its pink tufted blossoms whitening with age, stood above the thousands of lilac starry flowers which studded the slender branches of the Sandwort (*Arenaria marína*), and almost hid from view the little pale pink blooms which still stood here and there on the spreading branches of the Sea Milkwort, and which a month or two earlier had doubtless grown there in great multitudes.

On the sand, the branches of the Sea Purslane (*Arenaria peplóides*) spread flowerless, but clothed with their four-ranked leaves; and branches of pale-green prickly foliage grew in clumps, to remind us that in earlier months the Yellow Horned-poppy had waved there its golden petals to the wind. The Sea-holly (*Eryngium marítimum*), with its beautiful sea-green richly veined leaves, seemed so clad with prickles that we could scarcely venture to touch it; while its scaly head had almost lost all the blue tint of the florets which a short time since had enlivened its pale green. The tall Starwort (*Aster Tripolium*) yet bore its lilac rays around its golden disk, and, though not abundant, was still the

mostshowy plant of the marsh. We trod every moment on some succulent bright-green stem of the jointed Glasswort (*Salicornia herbacea*), whose pale-green flowers had perished long ago, but whose clear and bright stems looked almost like green-coloured glass tubes; while at every footstep we crushed some of the pale whitish-green sprays of the Sea Southernwood (*Artemísia marítima*), and walked on amid continual aroma diffused from the bruised plant. The little sprays of this Southernwood, scarcely more than a foot high, were yet in such abundance that they gave a white tint to many a spot on which they grew, and, looked at singly, reminded one by their form, though not by their hue, of a miniature fir-tree. Then there were species of Sea Orache, some of them with leaves and flowers tinged with redness; but the most common kind there was the sea-side species (*Atriplex marína*), with its pale narrow leaves, and large flat seed-vessels; and here and there a clump of the sharp and spiny leaves which grew on the angled and rough stems of the Saltwort (*Salsola Kali*), which, though its greenish flowers were gone, still showed the three sharp-looking leaf-like bracts which had formerly grown at their bases.

We had wandered for a mile over this singular scene, now listening to the screams of the sea-bird over the waters, or to the soft murmurs of the waves which fell gently over the shelly margin, when all at once we came to some dark sprays, looking so like the branches of heath, that we knew in an instant that the long-looked-for plant was found. The narrow, almost thread-like leaves, crowded on the branches, and there among them grew

the pretty little pink campion-like flowers, so small that the half of a split pea might cover one of them, but very elegant in their form, and of a delicate rose-coloured hue. The blossom is nearly allied to the Pink and Campion tribe; and on pulling out the petals, we find them clawed like those of the Pink, though the general structure of the plant is very different. The leaves are very numerous, growing in bundles, and much like those of our common purple heather; and the stems are wiry and spreading. This species is found more at the eastern coast of England than elsewhere. It is not uncommon on several muddy shores of the Isle of Sheppey, in Kent; and about Yarmouth, on the salt marshes. It also grows on some sea cliffs, as at Archcliff Fort, at the west of Dover, and at Lydden Spout, which lies at the east of that ancient town. It is unknown on our northern coasts. On those of France it is common; and the plant is called by the French, *La Frenkenne*. Backhouse, in his work on Australia, speaking of the country in the neighbourhood of Adelaide, says, that the salt marsh there was covered with two kinds of Glasswort, one of which was shrubby; and that interspersed among them were two species of *Frankenia*, one of these being bushy, about a foot high, and besprinkled with rosy-pink blossoms, the size of a silver penny.

2. *F. pulverulenta* (Powdery Sea-heath).—*Leaves* inversely egg-shaped, and blunt, smooth above, downy and powdery beneath. Plant annual. This plant is commonly enumerated in our list of British species, but no habitat is now known for it. It was found in the time of Dillenius on the coast of Sussex. Its stems are

described as prostrate, and its flowers rather smaller than those of the Smooth Sea-heath. The Sea-heaths in general are not sufficiently showy to obtain much attention from gardeners; but two or three species are border flowers, and are natives of Siberia or the Cape of Good Hope.

Order XIII. ELATINEÆ.—WATER-WORT TRIBE.

Sepals 3—5, distinct, or growing together at the base; *petals* equal in number to the sepals; *stamens* the same in number as the petals, or twice as many; *ovary* with 3—5 cells and as many styles and globular stigmas; *capsule* with 3—5 cells and valves; *seeds* numerous, wrinkled, arising from the centre of the capsule. These Water-worts are annual, aquatic, herbaceous plants, with rooting, pipe-like stems and opposite leaves. They are not showy flowers, but homely weeds, abounding in marshes and waste places in most parts of the world. They are, as far as is known, perfectly harmless; but they possess no medicinal properties.

1. Elátiné (Water-wort).—*Sepals* 3—4, growing together at the base; *petals* 3—4; *stamens* 3—4, or 6—8; *styles* 3—4-celled, many seeded: *seeds* cylindrical, furrowed, and marked with transverse lines. Origin of name doubtful.

1. Elátiné (Water-wort).

1. *E. hexándra* (Six-stamened Water-wort).—*Flower* stalked; *petals* 3; *stamens* 6; *capsule* 3-celled; *seeds*

straight. Plant annual. This, though by no means a common aquatic, is found in some lakes and pools, growing either entirely below the surface of the water, or forming dense masses at their margins. The whole plant is small, and the minute rose-coloured flowers are produced from July to September. Sir William Hooker and Dr. Arnott give as the places of growth of this species, several pools in various counties of England. The Rev. C. A. Johns remarks of this plant, in his "Flowers of the Field," that when left by the subsiding water it assumes a bright-red hue.

2. *E. hydropíper* (Eight-stamened Water-wort).—*Flowers* sessile; *petals* 4; *stamens* 8; *capsule* 4-celled; *seeds* curved. Plant annual. This species grows in similar places to the last, and flowers in the same season, but is still more rare; it is so much so, that Professor Hooker and Dr. Arnott have seen only a specimen procured from Paris; but these botanists give as its habitats, Farnham, in Surrey; the east end of Llyn Coron, in Anglesey; Newry; and at the Lough Neagh outlet of the Lagan Canal, Ireland.

Order XIV. CARYOPHYLLEÆ.

Sepals 4 or 5, connected into a distinct tube; *petals* of the same number as the sepals; *stamens* usually twice as many as the petals, sometimes equalling them in number, and like them inserted on the stalk or ring of the ovary; *ovary* 1, raised on a short stalk, or inserted in a ring; *stigmas* 2—5, running along the inner surface

of the styles; *capsule* 1, or imperfectly 2—5-celled, opening by twice as many teeth or valves as there are styles; *seeds* inserted on a central column. The plants of this order are herbaceous or shrubby, inhabiting the mountains and pastures of the temperate and frigid zones of the globe. In Europe they are particularly abundant, and least so in Africa and America. Many, as the Carnations and Pinks, have highly fragrant flowers; and others, like various species of Lychnis and Catchfly, have blossoms of rich hue and beautiful form. Our woods and meadows are adorned by the wild species, and Cuckoo-flowers, and Stitchworts, Sandworts, Spurreys, Catchflies, and Campions belong to this tribe. The medicinal properties existing in the *Caryophylleæ* are not very numerous; and the beautiful Pink genus is its greatest attraction. This order is again divided into the two groups, or sub-orders, *Siléneæ* and *Alsíneæ*.

Sub-order I. Silénеæ—*Pink Tribe.*

Sepals connected into a tube; *stamens* united at the base with the stalk of the ovary.

* *Calyx* 5-*cleft*; *petals* 5, *with long claws*; *stamens* 10.

1. Diánthus (Pink).—*Calyx* tubular and toothed, with two or more opposite scales at the base outside; *styles* 2; *capsule* 1-celled, opening at the top with 4 valves; *seeds* flattened. Name from the Greek words for Jupiter and a flower, expressive of its beauty and fragrance as worthy of the gods.

2. Saponária (Soap-wort).—*Calyx* naked at the base; *styles* 2; *capsule* 1-celled, opening at the top with 4 valves; *seeds* rounded. Name from *sapo*, soap; the plant possessing the soapy principle.

3. Siléné (Catchfly).—*Calyx* naked at the base; *petals* generally crowned at the top of the claw; *styles* 3; *capsule* imperfectly 3-celled, opening at the top with 6 valves. Name supposed to be from the Greek *salíva*, on account of the viscid moisture on the stalks of some species.

4. Lýchnis (Campion).—*Calyx* naked at the base; *petals* generally crowned at the top of the claw; *styles* 5; *capsule* opening at the top with 5 or 10 teeth. Name from the Greek *lychnos*, a lamp; the cottony down on the leaves of some species having been used as wicks for lamps.

5. Agrostémma (Corn-cockle).—*Calyx* naked at the base, tough, with 5 teeth. Name signifying, in Greek, Crown of the Field.

Sub-order II. Alsínéæ—*Chickweed Tribe.*

Sepals distinct; *stamens* inserted into a ring beneath the capsule, which is not stalked.

6. Sagína (Pearl-wort).—*Sepals* 4—5, spreading when in fruit; *petals* 4, sometimes wanting; *stamens* 4; *styles* 4; *capsule* 4-valved. The name, in Latin, signifies *fattening meat*, but is inappropriate.

7. Mœnchia.—*Sepals* 4, erect; *petals* 4; *stamens* 4; *styles* 4; *capsule* opening at the top with 8 teeth.

Named in honour of Conrad Mœnch, Professor of Botany at Hesse Cassel.

8. Holósteum (Jagged Chickweed). — *Sepals* 5; *petals* 5, toothed at the margin; *stamens* 3—5; *styles* 3; *capsule* opening at the top with 6 teeth. The name in Greek signifies *all bone*, but the reason of its being so applied is doubtful.

9. Spérgula (Spurrey).—*Sepals* 5; *petals* 5, entire; *stamens* 10 or 5; *styles* 5; *capsule* 5-valved. Named from *spargo*, to scatter, from the seeds being so widely scattered.

10. Stellária (Stitchwort).—*Sepals* 5; *petals* 5, deeply 2-cleft; *stamens* 10; *styles* 3; *capsule* opening with 6 valves or teeth. Name from *stella*, a star, from the form of the flowers.

11. Honckenýa (Sea-Purslane).—*Sepals* 5; *petals* 5; *stamens* 10; *styles* 3—5; *capsule* with 3, 4, or 5 valves. Name from Honckeny, a German botanist.

12. Arenária (Sandwort).—*Sepals* 5; *petals* 5, entire; *stamens* 10; *styles* 3; *capsule* opening with 6 valves. Name from the Latin *aréna*, sand, from the soil on which most of the species grow.

13. Cerástium (Mouse-ear Chickweed).—*Sepals* 5; *petals* 5, 2-cleft; *stamens* 10 or 5; *styles* 5; *capsule* tubular, opening at the end with 10 or 5 teeth. Name from the Greek *ceras*, a horn, from the shape of the capsule in some of the species.

14. Cherléria (Cyphel).—*Sepals* 5; *petals* 0 or 5, exceedingly minute, notched; *stamens* 10, the 5 outer ones with glands at the base; *styles* 3; *capsule* 3-valved. Name from J. H. Cherler, an eminent botanist.

15. Buffónia.—*Sepals* 4; *petals* 4, entire; *stamens* 4; *styles* 2; *capsule* 1-celled, 2-valved, 2-seeded. Name from the celebrated naturalist, Buffon.

1. Dianthus (Pink).

* *Flowers clustered.*

1. *D. Arméria* (Deptford Pink).—*Stem* and *leaves* downy; *flowers* in close tufts; *calyx scales* very narrow, downy, as long as the tube. Plant annual. This is not generally a common plant in England, but it grows in many places in Kent, as well as in some other counties, seldom however occurring in any quantity. The author once gathered about twenty specimens, on a hedge bank between Cobham and Higham, in Kent, and has found it near Sandwich, in the same county, on a stem nearly a yard high. The stem, however, is usually from a foot to a foot and a half in height, the upper part being much branched. It is rather downy, and has at its summit a little cluster of small rose-coloured flowers, which are dotted with white. The whole appearance of the plant is so like that of pinks in general, that no one would mistake it; and one of the most obvious features of difference between this and the next species, is the little white dots which always besprinkle its petals. This pink opens in July and August. It grows in fields, and on hedge-banks. It is apparently not wild in Scotland; for though it has been found in Angusshire, it is thought to have been introduced there.

2. *D. prólifer* (Proliferous Pink).—*Stem* smooth; *leaves* rather rough at the edge; *flowers* in heads; *calyx-scales* membranous, transparent. Plant annual. This



rare species of wild pink is found chiefly in gravelly pastures. Its flowers are rose-coloured, and grow on a stem which is about a foot in height: and the plant may be known from the last species by the dry brown scales which enclose the heads of the flowers. Another characteristic of this species is, that only one of the flowers in the cluster is open at a time. This mark, which in the Proliferous Pink is constant, is shared, though in a less degree, by the Deptford Pink; as in this latter kind, we may occasionally, though rarely, find more than one flower expanded. This plant flowers in June.

* * *Flowers not clustered.*

3. *D. caryophyllus* (Clove Pink, Carnation, or Clove Gillyflower).—*Flower* solitary; *calyx* with four broad-pointed scales one-fourth of its whole length; *petals* notched; *leaves* slender, glaucous, with smooth edges. Plant perennial. Fragrant as are the wall-flowers, which send their odours from tower and turret, yet they are not more sweetly scented than this "chronicler of crumbled halls." On the very summit of some of those fortresses which our warlike ancestors built for the defence of the adjacent country, this pink grows in luxuriance, nodding to the breeze which sweeps over the green ivy. No wonder that the sight of it on the old Norman keep of Rochester Castle suggested the lines by H. G. Adams on this flower:—

"The Castle pink, the Castle pink,
How wildly free it waves,
Exposed to every blast that blows,
To every storm that raves;

It heedeth not the pelting rain,
Nor whistling gales that sweep
Around the time-worn battlement,
Around the massy keep;
But smileth still, and flourisheth
The various seasons through,
For God He nourisheth the plant
With sunshine and with dew.

"The swallow loves the Castle pink;
And now and then a bee,
Borne upwards by a sudden gust,
Clings to it lovingly;
Like one who journeyeth afar
Where unknown realms extend,
Whose heart is gladden'd by the sight
Of some familiar friend;
The dusky rooks around it caw
When evetide veils the sky,
They mark it blooming sweetly there,
And know their home is nigh."

This pink grows on Sandown Castle, near Deal, on the old walls at Norwich, and a few other places in England. It is not likely that it is truly wild on any of these situations, but it has been known to grow on our castles for at least a hundred and eighty years; and strange it is that the habitats recorded for this and some other plants, should, century after century, be the same. Thus, in another instance, John Ray mentioned that the beautiful little Sea Lavender (*Státicé spathulata*) grew at Ramsgate, in Kent; and there it still grows in great luxuriance, on one part of the chalk cliff between Ramsgate and Broadstairs, in such profusion, as to clothe some yards of the surface of the cliffs with its flowers, while it is to be found on that spot only. Quite as

singular is it that the Hispid Marsh Mallow (*Althæa hirsúta*), which was recorded as growing near Cobham more than fifty years ago, still grows there, though it can be found in no other part of the kingdom. The *Dianthus caryophyllus*, with its pleasant clove-like odour —the July flower of our ancestors—varies in hue from a deep red to a pale rose-colour, or white. It is usually about a foot high. It is the origin of our valued flower the Carnation, and some botanists have thought that we owe to it all our beautiful varieties of pinks, Sweet-Johns, and Sweet-Williams, of the garden. These have long been favourite border-flowers, and Gerarde tells how, in his day, the Sweet-William was esteemed for its "beauty to deck up the bosoms of the beautiful, and for garlands and crowns for pleasure." These flowers, however, doubtless owe their origin to some smaller species, as the Deptford pink of our own pastures, or the feathered pink (*Dianthus plumarius*) of southern Europe, or the Carthusian pink (*Dianthus Carthusianorum*) of Germany. Dr. Withering remarks on this subject: "Gardeners well know that from the seed of the carnation pinks are never obtained, nor from that of pinks can carnations be procured. In fact, these favourite flowers originate from distinct species, and are not mere varieties of the same, as has been erroneously, and even recently, intimated. The art of floriculture, sometimes despised with a reprehensible degree of fastidiousness, has, in this instance, transformed a plant, comparatively obscure, into one of the most delightful charms which the lap of Flora contains. The surprising metamorphoses which the most indifferent are accus-

tomed to contemplate with pleasure, were probably commenced under a more genial sky than that of Britain; for we learn from Pliny, that these productions were unknown to the Greeks, and equally so to the Romans, until the Augustan age, when they were obtained from the brave Biscayans, as one trophy resulting from the conquest of that province, and were thence called *Cantabrica*. Our gardens may now receive embellishments from more than three hundred different kinds of carnations, under the denominations of Flakes, Bizarres, and Picotées (*Picquetté*, spotted); and these may be propagated by seed, but more successfully by cuttings, about the month of July."

Rare as our carnation pink is in this country, it is not uncommon on the south side of the Swiss Alps; and Meyen says, that at St. Jago de Chile it is quite as beautiful as with us, and probably more aromatic. It has been cultivated from time immemorial in Europe for its spicy odour and its beauty. A pleasant syrup is still in some countries made of its flowers, which our fathers termed Sops-in-wine, because of their old uses in giving flavour to the festive cup. It appears in former days to have been customary for persons who were betrothed to wear some flower as an external and conspicuous token of their engagement. The carnation was, it would seem, often chosen for this purpose; hence the lines of Spenser:—

> "Bring Coronations and Sops-in-wine,
> Worn of paramours."

Michael Drayton calls them Cloves of Paradise; indeed, of all the flowers prized by our forefathers, this,

the *Clove de giroflée*, was, next to the rose, the highest in esteem. It is amusing to read its praises, written by Lawson at the close of the sixteenth country, where he terms it the king of flowers, except the rose; and prides himself on being the possessor of gillyflowers "of nine or ten different colours, and divers of them as bigge as roses." "Of all flowers, save the damask rose," he says, "they are the most pleasant to sight and smell;" and adds, that "their use is much in ornament, and comforting the spirites by the sense of smelling." "There was a variety of this flower," says Mr. Hudson Turner, "well known in former times as the wall gillyflower, or bee flower, because growing on walls, even in winter, and good for bees;" but we are inclined to believe that this was our wallflower, which the old herbalists commonly called the winter gillyflower. "The reserved rent," says Mr. Turner, in his paper on the Horticulture of the Middle Ages, "the *unius clavi gariofili*, which is of such frequent occurrence in mediæval deeds relating to land, meant simply the render of a gillyflower, although it has usually been understood to signify the payment of a clove of commerce." "The incorrectness of this rendering," adds this learned and interesting writer, "must be apparent, if we recollect that the clove was scarcely known in Europe in the eleventh and twelfth centuries when this kind of reserved rent was most common."

The French term the Clove Pink *l'Œillet*, and the Germans *Die nelke*. It is the *Angelier* of the Dutch, the *Garofano* of the Italian, and the *Clavel* of the Spaniard. In its cultivated form of the Carnation, it is the chief

florist's flower of Germany. In the beginning of the eighteenth century, nearly 400 varieties had been enumerated by gardeners, and that number is probably now increased. One addition to their worth as garden-flowers is, that the Carnation and most of the Pinks have their foliage as abundant in winter as in summer, and of as rich a sea-green tint. The Dutch, who cultivate all the tribe largely, as we do, call the Sweet-Williams *Keykens,* which is their name for a nosegay. With us they are prized in the grandest as well as the humblest garden, and many may say with Hurdis—

> "Ye botanists, I cannot talk like you,
> And give to every plant its name and rank,
> Taught by Linné, yet I perceive in all,
> Or known or unknown, in the garden raised,
> Or nurtured in the hedge-row or the field,
> A secret something which delights my eye
> And meliorates my heart. And much I love
> To see the fair one bind the straggling pink,
> Cheer the sweet rose, the lupin, or the stock,
> And lend a staff to the still gadding pea;
> And let me praise the garden-loving maid,
> Who innocently thus concludes the day:
> Ye fair, it well becomes you!"

On a few walls in this kingdom, as on those of Ludlow Castle, the common Pheasant's-eye Pink (*Dianthus plumarius*) grows apparently wild, but it is not truly so. It is a hardy flower, and has been much cultivated by mechanics and operative manufacturers around large towns. The muslin-weavers about Paisley have been celebrated for the beauty of the Pheasant's-eye Pinks which adorn their gardens, and afford them so



good a recreation from toil. These growers reckon above 300 varieties of this species.

4. *D. cæsius* (Mountain Pink or Cheddar Pink).—*Stems* mostly single flowered: *scales* of the calyx, roundish, slightly pointed, about one-fourth as long as the tube; *leaves* long and narrow, glaucous, rough at the edges; *petals* bearded and irregularly jagged. Plant perennial. This is an exceedingly rare species, growing on the limestone cliffs at Cheddar in Somersetshire, and bearing, in July, large fragrant rose-coloured flowers.

5. *D. deltoídes* (Maiden Pink).—*Flowers* solitary; *calyx* scales pointed, usually 2, half the length of the calyx; *petals* notched; *stem* and *leaves* somewhat rough. Plant perennial. This is a rare pink, found on dry banks, where the soil is of gravel. The stems are from six to twelve inches high, and much branched. The flower appears in July and August; it is rose-coloured, dotted with white, and has a dark ring around the centre. It is without perfume.

2. Saponária (Soap-wort).

1. *S. officinális* (Common Soap-wort).—*Leaves* opposite and connate, broad, pointed, and smooth; *panicle* of several large flowers. Plant perennial. This is not an uncommon plant by road-sides, and on the margin of woods and hedge-banks, but it is rarely seen at any distance from houses. It cannot be regarded as truly wild, and as it was valued by our forefathers for "decking of houses," we are doubtless indebted to them for it in our hedges. The whole herb is full of a mucilaginous juice,

which will lather with hot water, and may be used as an indifferent substitute for soap. The roots contain this soapy principle (*saponine*) in a greater degree than the foliage, and might perhaps be employed with greater advantage. Saponine has been found by chemists to exist in several other of our wild and garden plants; and these plants are said, by M. Bonnet and M. Malapert, to be poisonous, in consequence. In some plants this principle exists only in the root, in others in the foliage and seed. These great chemists found that, in the Corn-cockle (*Agrostemma*), it was found in the unripe seed, and in the roots, but in no other part of the plant. The Nottingham Catchfly (*Silène nutans*) contains at least as much saponine as the Soapwort, and here it is diffused in all parts of the plant except the seed. Our Clove Pink, as well as several other of our garden and wild pinks, have it also chiefly in the roots, a small portion existing in the leaves, and none in the flower, or seed. The wild Lychnis (*Lychnis dioica*), and the brilliant Scarlet Lychnis of the flower-bed, as well as the little Scarlet Pimpernel and some other field flowers, have it in more or less abundance. It seems to be detected chiefly in plants belonging to the Order Caryophylleæ, but it is quite absent from some genera of this Order, as in the Sandworts and Stitchworts.

On account of the quantity of the soapy principle known to exist in the Soapwort, the learned botanist Fuchs thought that this must be the plant termed *Struthium* by the ancients, which they used as soap, and also in dyeing, and which must doubtless have possessed a saponaceous

juice. Difficult, however, as it may be to decide what this plant may have been, its description is not believed by learned men in general to be at all applicable in other respects to the Soapwort. Beckmann, referring to the subject, says, "We may conjecture, with some probability, that the plant called *Gysophyla struthium* by Linnæus, (which is also a plant of the Caryophyllaceous family,) is the *struthium* of the ancients; and it is still used for washing in the lower part of Italy and Spain. This opinion acquires some strength by the plant having been thus adopted among the Italians and Spaniards, and because, as Pliny says, it grows on a rocky soil, and on the mountains. It is also still called Lanaria by the Calabrian peasants. It has a tender stem; its leaves are so like those of the olive-tree, that they might be confounded with them by those who are not botanists, and its root is large, but the plant is neither rough nor prickly." Theophrastus and Pliny both describe the plant as prickly, so that some difficulty occurs on this point, but Linnæus felt quite convinced that the *Gysophyla* furnished the soap of the ancients. Loffling, who found this plant in the Spanish mountains, as well as in the neighbourhood of Aranjuez, relates, that in the province of La Mancha the people boil clothes, that are to be washed, with its root, instead of soap. The juice of our common Soapwort is used in Italy for cleansing wool and cloth; and in the Helvetian Alps the sheep, before they are shorn, are washed with a decoction of this plant; and a preparation of its roots with a mixture of ashes is commonly used there in washing linen. Gerarde tells us, that, in former days,

the plant was used in baths, "to beautifie and cleanse the skin." One of its old names, also, was Fuller's herb.

The saponine principle abounds in the fruit of the horse-chestnut, which is still used in the south of Europe for washing various substances. It is certain that the ancients not only used plants in washing, but that they made soap, as we do in modern times, by a mixture of lixivious salts, with grease; and that the mineral alkali of the people of Egypt was made in the time of Pliny from the ashes of plants is pretty certain. A similar alkali was used by the ancient Hebrews; and when the prophet Jeremiah said, "Though thou wash thee with nitre, and take thee much soap (*borith*)," the latter material was doubtless then in use, and was probably the *borak* of the Arab in the present day, which is procured from the ashes of the saltworts of the desert, and other plants. Some species of the fig marigold are called by these people the washing herbs. The nitre of the ancients was doubtless an alkaline salt.

The double variety of Soapwort is a pretty border plant, but it is inconvenient on account of the spreading nature of its roots, which run underground like couch. Its flowers are like those of the wild species, of a pale rose-colour. Our wild Soapwort blossoms in August and September, and sometimes bears double flowers. It grows on a stem a foot or a foot and a half in height, and the smooth leaves are of a dark glossy green. Its bitter juices were formerly considered a good remedy for bruises, and it was called Bruisewort; the French call it *La Savonnière*, and the Germans *Das Seisenkraut*. Its name of Sheep-weed (*Zeepkruid*) points to its uses



in Holland; and the Italians term it *Saponaria*, and the Spaniards *Sabonera*. The *Saponaria Vaccaria*, a species found wild in Germany, is the celebrated Cow-herb, which is so valued by the continental herdsmen as food for their cows.

3. Siléné (Catchfly).

* *Stems tufted, short; flowers solitary.*

1. *S. acaúlis* (Moss Campion, or Stemless Campion).—*Stem* much branched, tufted; *leaves* narrow, fringed at the base; *flower-stalk* single-flowered; *petals* crowned, and notched. Plant perennial. We have several wild flowers which are called stemless, as the stemless thistle and campion; but this is not because the stem is entirely absent, but because it is very short. In this instance the flower-stalks are two or three inches high, and this pretty alpine campion forms a dense matted turf, with its beautiful bright purple flowers peeping up among the foliage like stars. It is never seen on lowland ground, but is found only at the summits of our loftiest British mountains. It is one of the loveliest ornaments, during June and July, of the rocky parts of Snowdon, and on the Helvellyn side of Grisedale Tarn, in Cumberland, where—

> "Up among the mountains,
> In soft and mossy cell,
> By the silent springs and fountains
> The lovely wild-flowers dwell."

It is abundant on all the Scottish mountains; its branching stems bear a profusion of flowers, which vary sometimes to white, and are prized as alpine

flowers must be, not only for their own loveliness, but from their association with the wildest and grandest scenery which earth can exhibit. Dr. J. H. Balfour, in his notice of a botanical excursion made in the Highlands of Scotland, gives us a graphic picture of the plants which adorn their alpine tracts. "The Alpine Veronica," he says, "there displays its lovely blue corolla on the verge of dissolving snows ; the Forget-me-not of the mountain summit, whose tints far excel those of its namesake of the brooks ; the Woodsia, with its tufted frond, adorning the clefts of the rocks ; the sunny Gentian, concealing its eye of blue in the ledges of the steep crags ; the Alpine Astragalus, enlivening the turf with its purple clusters; the Lychnis, choosing the stony and dry knoll for the evolution of its pink petals; the *Sonchus Mulgedium*, raising its stately stalk and azure head in spots which try the enthusiasm of the adventurous collector; the pale-flowered Mountain Sorrel, confining itself to a single British cliff; the Azalea, forming a carpet of the richest crimson; the Saxifrages, with their yellow, or white, or pink blossoms, clothing the sides of the streams ; the Saussurea and Erigeron, crowning the rocks with their purple and pink heads ; the Purple Cinquefoil, blending its yellow flowers with the white of the Alpine Cerastiums, and the bright blue of the stony Veronica; the stemless Silene giving a pink and velvety covering to the decomposing granite ; the yellow Hawkweeds, whose varied transition forms have furnished such a fertile source of dispute among botanists; the slender and delicate grasses; the Chickweeds the sedges, and the rushes, which spring up on the

moist alpine summits; the graceful ferns, the tiny mosses with their urn-like thecæ; the crustaceous dry lichens, with their spore-bearing apothecia: all these add such a charm to Highland botany, as to throw into comparative shade all the vegetation of the plains."

* * *Stem elongated; flowers panicled; calyx inflated, bladder-like.*

2. *S. inflăta* (Bladder Campion).—*Stem* erect; *leaves* oblong, tapering; *flowers* panicled, numerous; *calyx* inflated, bladder-like; *petals* deeply cloven, rarely crowned. Plant perennial. This species of *Silene* is not difficult of distinction, being at once recognised by its thin globular flower-cup, delicately marked with a network of purplish brown or darker green veins. The calyx, as well as the foliage, has a pale sea-green bloom on the surface; and the plant bears its white flowers in June and July. As early as April the young shoots of the Bladder Campion are to be found under the hedge; and many of us have eaten their pale, delicate, green young leaves, and thought how much their flavour and odour resembled those of the green peas of the table. Professor Burnett remarks, that they make a very agreeable vegetable, if gathered when about two inches long; but we have found that even when boiled they retain a slight degree of bitterness, which prevents their being pleasant. As that botanist has remarked, however, this is a plant deserving cultivation, as it might be substituted for green peas or asparagus, having something of the flavour of both. This flower is very common in corn-fields, pastures, and hedges, in most parts of the kingdom, but

is not universally so; for the author of these pages was once promised by a botanist, near Tunbridge Wells, the sight of a rare plant, and was somewhat amused after a long walk to find that this botanic curiosity was a fine specimen of Bladder Campion, which her companion greatly exulted in having discovered in one or two places in that neighbourhood, but which she had been accustomed to regard as scarcely more rare than a primrose. The foliage is usually smooth, but a downy variety is occasionally found. Baxter remarks, that two minute funguses, *Œcidium Behenis* and *Uredo Behenis*, are parasitical on the leaves and stems of the Bladder Campion. "I found them both," says this accurate writer, "on this species of *Silene*, near the road leading from Bullington Green to Cheyney Lane, near Oxford, in August, 1827. I do not know," he adds, "that either of them had been found before in England."

3. *S. marítima* (Sea Campion, or Catchfly).—*Stems* many from the same root, spreading, either single or few flowered; *leaves* oblong and pointed, and sometimes narrowing towards the base, finely toothed at the edges; *petals* crowned and slightly cleft. Plant perennial. Those who are used to gather the Bladder Campion from the lane or field, are sometimes surprised to see it growing on the sandy sea-shore, where they could expect to find little but Sandworts and sea-side grasses. Excepting that its flowers are larger, and its stems much shorter, the shore species resembles the common Bladder Campion, having those same bladdery cups which children often snap suddenly on the back of the hand, with a sharp noise. This plant is not uncommon

on the sandy or stony shore, flowering there all the summer; it is also found by alpine rills. The Rev. C. A. Johns states, that he has found in Devonshire a variety with double flowers.

* * * *Stems elongated, flowers in whorls.*

4. *S. Otites* (Spanish Catchfly).—*Stems* erect, somewhat branched, with few leaves; *petals* narrow and neither cleft nor crowned; *stamens* and *pistils* on different plants; *leaves* narrowing at the base. Plant perennial. This is a rare, or at least a local plant, easily known by its whorls of small flowers with their narrow petals of yellowish-white colour, which expand in July. It occurs on sandy fields in some of the eastern counties of England. The stems are about a foot high and very clammy at the middle.

* * * * *Stems elongated; flowers in leafy clusters, alternate.*

5. *S. Anglica* (English Catchfly).—All parts of the plant hairy and clammy; *petals* small, crowned, slightly cleft or entire; *flowers* lateral, alternate, erect, lower ones bending downwards when in fruit; *leaves* narrow, tapering. Plant annual. This species too is somewhat local, though in many parts of England it occurs in plenty, attaining greater or less luxuriance according to the soil. Its stem is from 6 to 12 inches high, and it is so clammy as to be often quite disfigured by the insects adhering to it, their little wings held tightly by the viscid substance which allured them thither. The flowers,

which may be found all through the summer, are usually pinkish white, and very small; but several varieties are found of the plant, in one of which the flowers are solitary in the axils of the upper leaves. This has usually a red spot on each of its petals. It has been found wild near Wrotham, in Kent, and some other places; and it was formerly much planted in gardens, under the name of *Silene quinque-vulnera*. It grows low, and is very prolific, so that it is well adapted for sowing in pots; but it is less generally cultivated than it once was. The Dutch call this, or some other species of Catchfly, *Veldkaars*.

* * * * * *Stems panicled, leafy; calyx not bladder-like.*

6. *S. nútans* (Nottingham Catchfly).—*Flowers* all drooping one way; branches opposite, 3-forked; *calyx* much swollen, and marked with dark-brown lines; *petals* deeply cloven, crowned; *stem-leaves* lance-shaped, those of the root tapering at the base. Plant perennial. Those who have never scented the evening air made fragrant by a number of these flowers, can hardly imagine how powerful an odour they exhale. It has somewhat of that perfume, so like that of prussic acid, which exists in several of our flowers, as the Meadow-sweet and Blackthorn; but it is far more powerful than the scent of either of these blossoms; and when borne to us, as it sometimes is, on the sea-breeze, it is truly delicious. This plant flowers during June or July, on some limestone and chalk rocks of our sea-shores, as well as on those of inland districts, but is not

common. On portions of the sides of those towering and majestic cliffs which border the shore for several miles along the east of Dover, as well as at some parts of the cliffs standing to the west of the town, thousands of the pretty white starry blossoms of the Catchfly may be seen in the evening, growing on stems about a foot high. Nor do these flowers wait, as some night flowers do, for darkness ere they expand; for the author has seen them in their full glory by eight o'clock, before the soft twilight had thrown its subdued shadow over the summit of the cliffs. Many a lovely flower grows on those cliffs; for although on sailing past them at a distance their white surfaces seem only streaked with stripes of verdure, yet on walking by them we find that their crags and clefts shelter the flowers so well, and the sun shines on them so fully, that plants peculiar to the chalk could hardly find a better place of growth. Many a wanderer goes thither in the earlier part of the day, and brings home nosegays of Horned-poppy, and Viper's-bugloss, and Sea-lavender, and pink Centaury. Many such a one sees the Catchfly, and passes it by, deeming it a plant which has lost its blooom, and is all unfit to mingle with gayer, fresher flowers; he can at that time detect neither beauty nor odour. These are truly—

> "The flowers that shun the blaze of noon,
> To blow beneath the midnight moon;
> The garish world they will not bless,
> But only live in loneliness."

This plant received the name of Nottingham Catchfly, because it is common in the neighbourhood of that town.

It is found also on the cliffs of the Isle of Wight, and on the mountain-limestone rocks of Orme's Head, as well as on the rocks about Knaresborough, in Yorkshire, Dovedale, and other places, growing in more or less abundance. Its profusion on the cliffs of Dover gained for it in former days the name of Dover Catchfly. It is the *Siléné paradoxa* of our older botanists. It retains its peculiarity of opening only in the evening, even after it is gathered; and its scent is then almost too powerful to be borne in a room. It may be raised from seed in a garden, if the soil is chalky; but the odour there is not so powerful as when in its wild state, and in such cases as are known to the author, the plant soon degenerated.

7. *S. Itálica* (Italian Catchfly).—*Stems* erect, downy, bearing several flowers; *branches* opposite, with blunt teeth; *petals* deeply cleft, not crowned; *root-leaves* on long stalks, tapering at the base; *stem-leaves* without stalks, long and narrow. Plant perennial. The white flowers of this rare plant expand in July and August, and much resemble those of the Nottingham Catchfly; but this species may be distinguished by its longer and blunter calyx. The plant is downy, and the panicles are somewhat clammy. It is probably not a truly wild flower, but has been found on Dover cliffs and in the neighbourhood of Dartford.

8. *S. cónica* (Striated Corn Catchfly).—*Stem* erect, forked; *leaves* narrow, downy; *petals* crowned; *calyx* of the fruit conical. Plant annual. This is a rare species of Catchfly, with small flowers of a purplish-red colour, several of which grow on short stalks on a stem

from six to twelve inches high, flowering from May to July. The calyx of the fruit, which is conical in form, is said by the Rev. C. A. Johns, to have thirty furrows, while that of the *Siléné noctiflóra* is ten-ribbed. Minute as distinctions of this kind are, they are quite constant, exciting the admiration of every thoughtful observer, and affording an evidence of the continued care of God over all his creation. And as we trace these proofs of design, we are reminded of the words of the poet:—

"Suppose that on awaking
Some morning from repose,
We saw the green earth studded o'er
With every flower that blows:

"Suppose until that moment
We ne'er had seen a flower,—
That one had never graced the earth,
Even in Eden's bower:

"Say, should we ask these visitants
Their birth-place and their home;
If they had come to stay with us,
Or were again to roam?

"And should we gaze upon the rose,
In its rich variety,
And ask what hand had mingled thus
Its graduated dye?

"And who had given the luscious scent
Which from its ambush stole,
Spreading luxurious influence,
Like music, o'er the soul?

"We who had seen the stars career
Still in their nightly dance,
Should we look on these gems of earth,
And say they came by chance?

"No, in the lily's grandeur,
And in the rose's hue;
In the bright dahlia's gorgeousness,
In the violet's eye of blue;

"In the pencilling of the passion-flower,
In its deep mysterious sign,—
All hearts would feel, all lips confess,
Their Maker is divine."

The Corn Catchfly grows on sandy fields, and has been found near Bury and Thetford, in Suffolk; at Dirleton, in Haddingtonshire; and near Sandown Castle, Kent. The latter place is interesting to the botanist at the season of its growth, because on this castle may be found the Clove-pink; and on the beach beside it in some seasons, the Sea-pea (*Láthyrus marítimus*), with its rich clusters of flowers, trails among the shingle.

9. *S. Arméria* (Common or Lobel's Catchfly).—*Stem* erect and viscid; *petals* notched, and crowned with awl-shaped scales; *calyx* club-shaped, and smooth; *leaves* broadly lance-shaped; *panicles* of flowers level topped. Plant annual. This is very well known as a garden flower, its handsome pink cluster expanding in July and August, and growing on a stem a foot or a foot and a half high. It is now extinct as a wild flower, but is retained in the list of the British Flora, from having been found on the banks of the Dee, and at Yalding, in Kent, by Dr. Richardson and Mr. Borrer, who considered it was naturalised on those spots. It grows wild in France, Germany, and Switzerland.

10. *S. noctiflora* (Night-flowering Catchfly).—*Stem* erect, many times forked; *calyx* with long teeth, oblong



when in fruit, 10-ribbed; *leaves* lance-shaped, lower ones tapering towards the base. Plant annual. This is, too, a night-scented species, opening its rather large and fragrant reddish-white flowers at sunset, and closing them by day. It is not a common plant, though found on sandy and gravelly corn-fields in various parts of England and Scotland. It blossoms in July and August. The upper part of the stem, which stem is about a foot in height, is much branched, each branchlet having a single flower, and one also appearing in the axil of the branch. The flower-stalks are clammy.

4. Lýchnis (Campion).

1. *L. Flos Cucúli* (Ragged Robin, or Cuckoo-flower). —*Flowers* loosely panicled; *petals* deeply 4-cleft, crowned; *leaves* very narrow. Plant perennial. All dwellers in the country like well to hear the cuckoo's voice; not that his monotonous tones have a melody like the notes of the thrush, for there is little real sweetness in the loud echo which they waken from the distant wood, now so full of the mirth and music of multitudes of singing birds. But when the cuckoo's notes are sounding over hill and dell, we know that summer is brightening the green earth. We hear that song while budding trees and blooming flowers are around us, and from earliest times, as our oldest English ballad proves, that voice has been welcomed. No wonder, then, that in days when men thought not of scientific names for the flowers, ere as yet those affinities had been traced which enabled the botanist

to arrange and name them—no wonder that the English peasant, or the old herbalist, or the resident of the monastery, gave to the flowers such simple English names as linked them with nature, and serve even yet to awaken pleasant memories.

It is interesting to trace in the old names of our flowers the old modes of thought and habits of life to which some of them point. The cuckoo was evidently a favourite bird, for many a pretty flower yet bears its name. There was the pungent Cardamine of the fields and woods, which still has, as well as the Anemone, the name of Cuckoo-flower. Then we have this bright and ragged Lychnis, while the Cuckoo-buds of the old poets are known to moderns as butter-cups. There was the Wood Sorrel, which was called Cuckoo's-meat, because, as Gerarde said, it came at the time when the cuckoo might need it for her food. There, too, is the Cuckoo-pint, which is still a rustic name for the Arum, and which may have been so called, because its half-folded vase-like leaf might hold some drop of dew or rain to refresh the early bird; or its name may be a corruption of Cuckoo-point, given because the purple or green column in the centre of its leaves was growing when the cuckoo was singing.

Many another bird or animal of the country was linked, too, with the flowers in the names of these olden days. The Swallow-wort, fancied to benefit the youngling swallow, and Hawk-weed, deemed good for the vision of the birds of prey; and Sheep's Scabious, and Bird's Cherry, and Duck-weed, and Adder's-meat, and Cow-berry, and Cow-wheat, and Dog's

Mercury, were, doubtless, all so named from their real or supposed uses. Many flowers, too, suggested, in some part of their structure, some animal feature; thus Stork's-bill, Crane's-bill, Pheasant's-eye, Hare's-ear, Mouse-tail, Hound's-tongue, Cat's-tail, Ox-eye, Ox-tongue, and Crow-foot, were so named from blossom, or leaf, or seed-vessel; while the entangling fibres of the root of one of the Orchises suggested the name of Bird's-nest orchis; and one of the velvety flowers of spring won for itself the name of Cowslip. Then there was an association with the times and seasons in the names Wake-robin, Day's-eye, Winter-weed, Maythorn, Blackthorn; St. John's-wort, of Midsummer-day, and St. Patrick's Cabbage, of St. Patrick's-day; and Evening Primrose, and Snow-drop, and Spring Cresses. The rustic list had its classic allusion in the name of the Grass of Parnassus; and its touches of sentiment in those of the Forget-me-not, Pansy, Heartsease, True-love, and True-love-knot; while the Wayfaring-tree, and Traveller's Joy, and the Queen of the Meadows, all remind us that those who so called them had an eye for the beauty of the landscape and its vegetation. Poor Man's Weather-glass, Shepherd's Needle, and Shepherd's Purse, all tell a tale of rural imaginations; while the old names of Fuller's Teasel, Fowler's Service, Dyer's Weed, Bed-straw, Flea-bane, Dyer's Rocket, Glass-wort, are still records of old uses of plants. The intercourse with foreign lands and the improvements in horticulture have so well filled our kitchen-gardens with a provision for the tables, that Salad Burnet, Lamb's Lettuce, Sauce-alone, Hedge-mustard, Winter Cresses, Poor Man's

Pepper, and Corn-salad, grow now ungathered, and we only wonder, while thinking on their names, at the simple taste which enabled our fathers to relish such a vegetable diet.

A large number of plants were named for their healing virtues, and though the herbalist often overpraised his simples, yet a few of them deserved their repute. In some, however, whose praises filled the pages of the old writers on plants, we can find no powers to correspond with their alleged properties; and we can only think that fevers were allayed by the water in which the herbs were mingled, and wounds healed by time, rather than by the reputed remedies; so that we could join in the recommendation given by Sir Kenelm Digby for some of the plasters then in use, that they should be applied to the weapons rather than the wounds. If Carpenter's Herb, and Sickle Herb, and Scurvy-grass, and Toutsaine, and Wound-wort, Shepherd's Spikenard, Feverfew, Self-heal, Poor Man's Parmacetti, and Souldier's Milfoil, had some small degree of healing virtues, yet we should be sorry to trust our afflicted friends to the cures effected by Palsy-herb, or Whitlow-grass, or Lung-wort, or Liver-wort. These last names, indeed, remind us of the notion that plants indicated by some external sign the healing powers which they possessed, so that the spotted leaves of the Lung-wort showed that it was good for diseased lungs, and the lobed form of the Liver-wort leaf marked its uses to man; while, on the same principle, the spotted stem of the Viper's Bugloss indicated its power to remedy the bite of the reptile.

Some of the prettiest of our country names are

derived from resemblances apparent to us all. Such are Sundew, Satin-flower, Allseed, Arrow-head, Awl-wort, Pearl-wort, Monkshood, Bladder-wort, Golden Rod, Bee Orchis, and many another; and the appropriateness of some which we see in our every country walk gives us a feeling of pleasure as we think of them. The winding habit of our favourite woodland climber is well described by the name Woodbine, and its honey-bearing tubes by that of Honeysuckle; the names of Bitter-sweet and Deadly Nightshade are no less appropriate. The name Foxglove, which is but a corruption of Folks'-glove, or Fairies'-glove, has a thought of poetry in its name; and the Speedwell was given by one who loved flowers, and that of Thrift by one who marked how, growing as it can on the scantiest soil, it resembled the virtue which made good use of small means. Gold-knobs, Gold-cups, Goldings, and King-nobs, were pretty names for the buttercups which clothe our meadows in such numbers and varieties, that old Culpepper says, "So abundant are the sorts of this herbe, that to describe them all would tire the patience of Socrates himself; but because I have not yet attained to the spirits of Socrates," he adds, "I shall describe their most usual forms." Besides those which we have given, the herbalist describes as common names in his day, for these plants, Frog-foot, Trail-flower, Poll-locket, Goulions, and Crowsfoot, so that, as he says, "This furious biting herb hath obtained almost enough to make up a Welshman's pedigree, if he fetched no further than John of Gaunt, or William the Conqueror."

The Lily of the Valley, the Mountain Ash, Heath,

Meadow Rue, Corn Marigold, Marsh Trefoil, Brooklime, Pond-weed, Water Avens, Alpine Gentian, Wood Anemone, Water-wort, Wall-flower, Tower Mustard, Sea-side Poppy, Shore-weed, and Salt-wort, are all appropriate and expressive names, and serve to indicate the spots on which we may find them growing.

Many of our common wild flowers received their names as expressive of the pious feelings of our ancestors. In these days, Revelation has come to almost every home of our land, teaching us no longer to adore fallible men, but to trust our sins and sorrows to Him who alone could atone, who alone can mediate. But in former days men mingled up strangely and darkly the intercessions of the saints and the Saviour; and the names of the flowers prove at least the religious thought which possessed the mind of him who so called them. The mother of our Lord, she who to latest days must be loved and honoured as "blessed among women," shared then, in the fond idolatry of human hearts, in a reverence accorded to holy men of old, or to others of whom we know nothing, save such legends as were traced by the hand of superstition. Wherever we find the word Mary or Lady in any way connected with the flower, we may generally infer that the latter is but the remains of "Our Lady," and that both refer to the Virgin. Nor was it the flower alone which received this associating name; the little insect which the merry child bids "fly away home," the Lady-bird, *La vache de la Vierge* of the French, was named, too, after "Our Lady." Lady's Tresses, Lady's Mantle, Lady's Slipper, Marygold, and Rosemary, Herb Bennet,

Herb Robert, St. Peter's and St. James's-wort, Sweet Cicely, Sweet Basil, are but a few of the names which probably originated from the monastery; and ancient associations are recorded in the names of Holy Herb, Holy Oak, Star of Bethlehem, Procession-flower, Herb of Grace, Trinity Herb, and many others; while a remembrance of old superstitions lurks in such names as that of Enchanter's Nightshade.

But our Meadow Lychnis, our Cuckoo-flower, has been long forgotten in the remarks which its name suggested. It is a very pretty flower, often sprinkling the grass far over the moist meadows with its rose-coloured jagged petals, which grow on a reddish-coloured stem, two or three feet high, during June and July. The lower part of the stem is hairy, and the upper part clammy. It is often, in country places, called Ragged Robin, or Bachelor's Buttons, a kind of button having been formerly worn which was made of pieces of cloth cut somewhat in the form of its petals.

2. *L. Viscária* (Red German Catchfly). — *Petals* slightly notched at the extremity; *stem* clammy at the joints; *leaves* lance-shaped and pointed. Plant perennial. This plant, which grows on dry alpine rocks, is found on Craig Breiddin, Montgomeryshire, and in the neighbourhood of Edinburgh and some other parts of Scotland. Its flowers are large, and grow in a panicle, on a stem about a foot in height. They are of a bright rose-colour, and the flowers appear in June.

3. *L. alpína* (Red Alpine Catchfly).—*Petals* cleft; *flowers* growing in a corymbose head. This is a rare plant, and in all probability not truly wild, though two

places of its growth in this kingdom have been recorded by botanists. One is on the summit of Little Kilrannoch, between Glen Prosen and Glen Callater; the other on Hobcaster Fell, Cumberland.

4. *L. Vespertína* (White Campion).—*Flowers* having usually the pistils and stamens on separate plants; *petals* 2-cleft and crowned; *capsule* with erect teeth; *leaves* oblong and tapering; *stem* and leaves downy. Plant perennial. This flower, which is by many botanists regarded as a variety of the following species, is very common on hedge-banks, in grass meadows, and corn-fields, from June to September; its substantial stem rising sometimes to the height of two feet, and the large flower of pure white overtopping the ripening corn or the tall flowering grass. Its specific name is given because it is a vesper flower, for though it is open all day, it breathes no sweet incense till the evening dews are on its petals. Sometimes the flower is delicately tinged with red, and its stems, which are viscid at the joint, are often of a brownish hue.

5. *L. diúrna* (Red Campion).—*Flowers* having usually the pistils and stamens on separate plants; *capsule* nearly globose, the teeth recurved; *leaves* broadly oblong, tapering, downy as well as the stem. Plant perennial. This Red Campion is rarely seen in the corn-field; its most frequent places of growth being the moist hedge-bank or the wood where water is standing. In some damp shady places the plant attains a great height, and is very abundant. The author has seen a wood of this description, which lay in a valley, filled during June and July with these plants, in so luxuriant a condition, the

stems a yard high, and the flowers so large, and of so deep a red, that the traveller paused in coming down the hill-side to look at the rosy hue of the landscape before him. The blossoms grow in a loose panicle, varying in tint from a deep rose-red to pale-pink or white; and the ordinary height of the stem is about one or two feet. Many beautiful species of *Lychnis* are cultivated by our gardeners. The white and red Campions are attractive flowers, while few plants make more show than the Scarlet Lychnis, which country people so commonly call Scarlet Lightning, and which our forefathers termed Cross of Jerusalem. It is the *L. Chalcedonica* of the botanist, and is a native of Russia, but is much improved by culture. The Italians call it, *Croce de Cavalière*.

5. Agrostémma (Cockle).

1. *A. Githágo* (Corn-cockle).—*Calyx* ribbed, much longer than the corolla; *petals* undivided, destitute of a crown; *leaves* narrow. Plant perennial. This showy Cockle unfolds its rich purple blossom at the period when the corn-fields are looking very beautiful, when the nodding grain is daily becoming more golden in hue, as the sunshine of June and July is ripening it for the sickle. It is sweet to wander during the various seasons at early morning, through the quiet pathway, and to look at those

> "Gorgeous flow'rets in the sun-light shining,
> Blossoms flaunting in the eye of day,
> Tremulous leaves with soft and silver lining,
> Buds that open only to decay.

"Everywhere about us they are glowing,
Some like stars, to tell us spring is gone;
Others, their blue eyes with tears o'erflowing,
Stand like Ruth amid the golden corn:

"Not alone in Spring's armorial bearing,
And in Summer's green emblazon'd field;
But on arms of brave old Autumn's wearing,
In the centre of his brazen shield."

Our beautiful Corn-cockle is too conspicuous a flower to escape notice, and well deserves its name of Crown of the Field, though this was at first applied to the German species of our gardens, the *Flos Jovis*. Ready as the lover of flowers is to admire the corn-flower, it cannot be pleasing to the agriculturist, who well knows that its seeds, which contain the noxious principle of saponine, may greatly injure his corn, and fill his flour with black specks. The capsule, when ripened, is full of large, black, glossy seeds, from which the plant obtained its specific name; the black aromatic seeds of some plant known to the Romans having been called *Git*, or *Gith*. *Gith* is an old Celtic word, and the word *Cath* is said by Sir William Hooker to signify a seed of corn in modern Gaelic. The French call this flower *La Nielle;* the Germans, *Der Raden*. It is the *Koornvlam* of the Dutch farmer, and the *Agrostemma* of the Portuguese.

The reader of Scripture, as he sees these purple flowers amongst the corn, is reminded of the denunciation of Job, "Let thistles grow instead of wheat, and cockle instead of barley;" but the word rendered "cockle" by our translators does not appear to refer to



this plant. From one of our old nursery songs, in which a neglected garden is said to be

"Full of weeds and cockle seeds,"

we are inclined to infer that the English word "cockle" had in earlier times a wider meaning than it has now. But whether our translators, by the word "cockle," did or did not intend this species of plant, it is now well known that Job could not have referred to it, as it is not a weed of Palestine or Arabia. All recent writers agree that some useless, if not noxious, common weed was intended by the Patriarch; and many have suggested that it was a bramble or other thorny plant, or that the word meant weeds in general. Dr. Royle infers as probable, that it is a species of Nightshade (*Solanum*), common in cultivated grounds, not only in Europe, but in Syria and Arabia. The same Hebrew word is, in Isaiah, rendered by "wild grape;" and the Arabs call the Nightshade by a name signifying Wolf's-grape, or Ox's-grape.

6. Sagína (Pearl-wort).

1. *S. procúmbens* (Procumbent Pearl-wort).—*Stems* prostrate, smooth; *leaves* pointed; *petals* much shorter than the calyx; *capsule* curved downwards before ripening. Plant perennial. This little plant, growing in small tufts, is among the most minute of our wild flowers. When we look at its tiny blossoms, and contrast them in imagination with some of the giants of the Vegetable Kingdom, we can but wonder at the remembrance, that the little Pearlwort is as perfect in its

structure as those large flowers of which travellers tell us. We read of the Monster Cactus, which reached Kew Gardens in 1846, and required eight strong mules to draw it over the mountains of Mexico, and ten men to place it in the scales at the gardens; of other species, thirty or forty feet high, forming a *chevaux de frise* to the plantation, and covered with rose-like flowers; of the blossoms of *Aristolóchia cordifolia*, which Baron Humboldt saw the children place on their heads for caps; of the *Victoria Regina*, with its lilies six feet in diameter; of the strange *Rafflesia Arnoldi*, whose immense petals measured a yard across, and whose nectarium would hold twelve pints of water; of the *Barbacenia*, which the Chevalier Schomburgh describes as having flowers six inches long, on a stem twelve feet high; of the immense *Furcræa*, of the Aloe family, which Karwinski found on the mountains of Mexico, whose tufts of leaves, six feet long, produced innumerable large white flowers, and rose to nearly ninety feet in height; and of various other plants renowned for their immense size. Many a specimen of the Pearlwort might be covered—stem, leaves, and flowers—with a florin, yet the tiny blossoms have their stamens and their pistils, and produce in abundance their little seeds. The hand of God has formed them with as much skill as the larger blossoms, and His work is as discernible in the smallest as in the greatest.

This little Pearlwort is not a favourite with the gardener, for it possesses itself too readily of his gravel paths, dispersing itself by its innumerable seeds, and taking root very easily, wherever it can find a suitable

soil. The gravelly heath, the crevices of the stone wall, and other waste places, are its common haunts; and it may be found among the short grass of the pasture, or alpine hill, or lowly valley. The central stem is erect and flowerless; but the stems which arise from this spread over the ground, being from two to four inches long; often sending out roots from different parts, at the insertion of the leaves, and new plants arising from these. The little green blossoms are to be seen all the summer, growing singly at the end of the stalks, or placed in the angles formed by the stalks and leaves. The leaves, which are awl-shaped, are scarcely thicker than a packthread, and have membranaceous margins at the base.

2. *S. apétala* (Annual Small-flowered Pearlwort).—*Stems* slightly hairy, erect, or ascending; *leaves* awned and fringed; *sepals* 4. This little Pearlwort is much like the last species, but smaller and more slender in all its parts; its stems too are erect and slightly hairy, and the fringed leaves afford a characteristic feature, while its petals, being always present, distinguish it from the next species. It grows on dry walls and gravelly places, flowering from May to September. Curtis says that it ripens its seed much more rapidly than any other English plant.

3. *S. marítima* (Sea-Pearlwort).—*Stems* erect, or procumbent only at the base; *leaves* fleshy, obtuse, or with a short point; *petals* none. Plant annual. This species is not uncommon at the sea-coast, or on land occasionally overflowed. It is generally of a reddish or purplish hue; but many writers think that its difference from

the preceding species is simply referable to the place of its growth. Old writers called the Pearlworts, Chickweed Breakstone; the French term the plant, *La Sagine;* the Germans, *Der Vierling;* and the Dutch, *Velmuur.*

7. Mœnchia.

1. *M. erécta* (Upright Mœnchia).—*Sepals* 4, large, pointed, and with a white membranaceous edge. Plant annual. This Mœnchia is not common, but it blossoms during May and June, on some of our pastures which have a gravelly soil, and may be easily distinguished from any other of our wild plants. Its stem is from two to four inches in height; its white flowers are large in proportion to the rest of the plant, and open only in the sunshine.

8. Holósteum (Jagged Chickweed).

1. *H. umbellátum* (Umbelliferous Jagged Chickweed). —*Stems* smooth below, and hairy above; *leaves* oblong and acute; *flower-stalks* turning downwards after flowering. Plant annual. This is a singular and interesting little plant, very rare in this country, found only on very old walls about Norwich and Bury. Its stems are about four or five inches high, leafy, and viscid between the joints. The flowers are about four or five in each umbel; and the petals are white with a reddish tinge. It blossoms in April. The French call the plant *Holosté;* the Germans, *Spurre;* and the Dutch *Zorghzaad.*



9. Spérgula (Spurrey).

1. *S. arvénsis* (Corn Spurrey).—*Leaves* slender, cylindrical, and awl-shaped, in whorls around the stem, with minute chaffy *stipules* at the base; *flowers* in panicles; *flower-stalks* bent down when in fruit. Plant annual. This Spurrey, which is common on gravelly and sandy soils throughout Europe, is from six to twelve inches high, and when luxuriant is sometimes more abundant in the cultivated field than the farmer desires. Its white flowers may be seen throughout the summer, and its stalks and flower-cups have usually a reddish tinge. The leaves, which are scarcely thicker than a coarse thread, are about an inch in length. The French call this plant *La Spergule;* the Germans, *Der Acker-spergel;* the Dutch, *Akker-spurri.* It is the *Spergola* of the Italian; and the Danish name of *Knaegraes* is not inappropriate, as the stalks bend at the joints in a sort of angular manner, difficult to describe, but giving a peculiar character to the Spurrey. Our country people have various names for the plant, as Sandweed, Yarr, and Pick-pocket.

Although the Spurrey is a troublesome weed in the corn-field, where its numerous seeds render it often abundant, yet it is a plant to be prized on the pasture land, as cattle eat it with much avidity, and it is highly nutritious. The farmers cultivate it in Holland on meadows destined to afford pasture for their cows; and it is also sown in the Netherlands among the stubble of the field from which the corn has been gathered in, in order that it may afford winter food for the sheep.

It is remarkably rapid in its growth, for it may be sown and reaped in the course of eight weeks, either in autumn or spring; and the sheep are much improved by feeding upon it. It is also a favourite and valuable food for poultry. Von Thaer remarked of it, that it is the most nourishing, in proportion to its bulk, of all forage, and gives the best flavoured milk and butter. Its culture has been recommended to the English agriculturist; but it is thought that the expense would exceed the remuneration of the crop, and, as Professor Martyn remarks, we have many plants better adapted to our poorest soils. The Spurrey grows wild in many parts of North America, and is very abundant in the neighbourhood of Quebec. It seems universal throughout Europe; and in Finland and Norway bread is made of its seeds during seasons of scarcity. The small flowers are very sensitive under atmospheric changes; and Dr. George Johnston remarks, "We have seen a whole field, whitened with its blossoms, have its appearance quite changed by the petals closing on a black cloud passing over and discharging a few drops of rain."

2. *S. nodósa* (Knotted Spurrey).—*Leaves* opposite, growing together at the base, upper ones very short, growing in knots, and having tufts of young leaves in the axils; *petals* much larger than the *calyx; flower-stalks* always erect. Plant perennial. As the Rev. C. A. Johns has remarked, in his "Flowers of the Field," this species may be known by its tufted leaves, which distinguish it from any other British plant. Its flowers are very pretty, and showy for its size; they grow two or three together, on a stem about three or four inches

high, and appear in August and September. The plant is not unfrequent on wet sandy fields and marshy places. The central stem is shorter than the lateral ones, and bears no flowers. Some writers consider this and the two following species as Pearlworts, and place them in the genus *Sagína*.

3. *S. saginoídes* (Pearl-wort Spurrey).—*Leaves* opposite, awl-shaped, and tipped with spines; *flower-stalks* solitary, very long, and smooth; *petals* shorter than the calyx. Plant perennial. This is a very small plant, not uncommon on the Highland mountains; bearing drooping white flowers in June and July.

4. *S. subuláta* (Smooth Awl-shaped Spurrey).—*Leaves* opposite, awl-shaped, crowned, and slightly fringed; *flower-stalks* solitary and very long; *petals* rather longer than the calyx. Plant perennial. This plant, which is very similar in appearance to the Procumbent Pearlwort, is common on gravelly pastures; its white flowers appearing in June and July.

10. Stellária (Stitchwort).

1. *S. média* (Chickweed).—*Leaves* egg-shaped, with a short point; *stems* with a hairy line alternating from side to side; *petals* deeply 2-cleft, not longer than the sepals; *stamens* 5—10. Plant annual. Everybody knows this common little plant. Our fathers called it also, Hen's Inheritance; its numerous seeds and young tops affording a good supply of food, not alone to the poultry which may stray over the grass lands, but also to those singing birds which God has sent to gladden

the heart of man, and to fill the wild wood with songs of joy.

The Chickweed grows everywhere on rich cultivated land. Now we find it springing up in the garden, after a spring rain, making the beds green with its young shoots, and even in winter having the light tint of the spring leaf. In the fields it calls for the weeder's care; and under the hedge-bank its white flowers bloom all the year long, save when the snows have covered every green thing. It is a very valuable plant to birds; nor is it one of the worst of those herbs which men have sometimes boiled for their food. We need hardly describe its small flower, for it may always be seen, like a little star among its leaves, when the sun is shining. It is a good indicator of the changes of weather; and we would warn the traveller to wrap his cloak about him if the flower is quite closed, for rain, if not come, is coming soon, when this is the case. But if the Chickweed flower is fully expanded, he may walk gaily on, with a pretty good assurance that for four hours at least he may be safe from rain; though if half closed, it would be well to take timely warning that the leaf may soon be wet with the passing shower. We, in modern days, find no great remedial virtues in this herb, but our forefathers recorded it as an effectual remedy against cramps, convulsions, palsy, and various maladies. "Boil a handful of chickweed," says one old herbalist, "and a handful of red-rose leaves dried, in a quart of muscadine, until a fourth part be consumed:" oil of sheep's feet was to be added, and the "grieved place" anointed therewith. One can imagine from the nature of some of the ingre-

dients, that the sufferer might find relief from pain by this application, but it was not completed without binding some of the chickweed over the part affected, which if done, would, as the director adds, "with God's blessing, cure the malady in three times the dressing."

2. *S. holóstea* (Greater Stitchwort, Satin-flower, or Adder's Meat).—*Stem* nearly erect, with four distinct angles, rough edged; *leaves* very narrow, tapering to a long point, delicately fringed; *petals* twice as long as the calyx, and cleft to the middle; *calyx* without nerves. Plant perennial. There is beauty on the earth in every season of the year, in some part or other of the landscape. The leafless woods of winter, with their crimson berries lingering yet, and their boughs sparkling with the frost, and beautiful in their varied outline and their emerald mosses, which half disclose some crimson or orange fungus,—have their beauties to offer to the wanderer there. The golden corn-field of August, when the bearded grain, doing obeisance to the passing wind, reminds us of the wind-swept ocean, has its chief loveliness of flowers in the autumn, when the crimson poppy, the yellow charlock, the corn-cockles, and the blue starry succory and lilac scabious contrast with the corn. The heath-land has its glory in summer time, when it is rich in its fragrant furze and broom, and branching ling, and purple and rose-coloured heather flowers, and nodding blue-bells; and when the linnet is yet singing among the furze tops, and the goldfinch comes thither to pick the thistle-down, and the bee and butterfly are there in search of nectar. May and June are the months in which the meadows are most lovely,

when the tall grass waves gracefully by the gold cups, and when thousands of silvery daisies glitter beside the blue speedwells, while the scented honeysuckles and brier-roses are unfolding. May is the loveliest season for the woodlands; which are, however, more or less lovely in every changing season. We lose some of the graceful forms of the boughs as they may be seen in full outline in winter, for green leaves are thickening fast upon them, nor is the green tint, though gay, so deep and varied as are the hues of July, or the autumnal touches of the brown October. Here and there some dark-green holly or darker yew contrasts with it, or a gleam of sunshine gives some bough a deeper yellow; yet now, elm and oak, and birch and hawthorn, have almost all the same pale and delicate verdure which tells of youth and spring. It is now that the flowers of the wood are in fullest perfection; and should our footsteps traverse those paths three months later, though fields and meadows are still rich and gay, yet the flowers of the wood will be comparatively few. The golden-rod may be there, and the magnificent foxglove, but all the wealth of anemones, and primroses, and violets, and hyacinths, and orchises, will have long since passed away. It is when these flowers are all in perfection that we see the delicate white blossoms of the Stitchwort gleaming among them, too large to be unnoticed, and too beautiful in their pearly petals and golden anthers to escape our admiration. No spring flower seems to our eyes more lovely than this; and it is a common flower too, growing among the grass of the hedge-bank, on a stem a foot high, and clad with delicate green

leaves, and seeming all the whiter from its contrast with the deep-blue hyacinth. Yet strange it is that few save botanists know its name, nor have many poets sung its praises, though none in forming a wild nosegay would fail to gather it.

It has not, however, been left quite unsung, for Calder Campbell has named it among the flowers of spring:—

> "The buds are green on the Linden-tree,
> And flowers are bursting on the lea;
> There is the daisy, so prim and white,
> With its golden eye and its fringes bright;
> And here is the golden buttercup,
> Like a miser's chest with the gold heap'd up;
> And the Stitchwort, with its pearly star,
> Seen on the hedgebank from afar;
> And there is the primrose sweet, though wan,
> And the cowslip dear to the Ortolan,
> That sucks its morning draught of dew
> From the drooping curls of the harebell blue."

This Stitchwort is about a foot or a foot and a half high, its stem and foliage somewhat glaucous, and very rigid and brittle. Indeed, so brittle is it, that it is impossible to pull up the plant by the root; and we can remember in childhood regarding it as a wonderful plant, growing without any root, as it breaks off just above the earth, and we could never by our simple implements bring a fibre to view. The French call this plant *La Stellaire;* the Germans, *Das Augentrost-gras;* and it is the *Oogentroost-gras* of the Dutch. Our fathers called it All-bones, probably with a jocose reference to its brittleness. It has a great number of capsules, which separate by valves, and scatter its profusion

of seeds. These seed-vessels droop when the flower is over.

3. *S. graminea* (Lesser Stitchwort).—*Stem* nearly erect, angular, smooth; *leaves* very narrow, acute, smooth, fringed; *flowers* in forked panicles; *corolla* scarcely longer than the calyx; *sepals* 3-nerved. Plant perennial. This species, which is in blossom during June and July, is neither so frequent nor so ornamental as our spring favourite, though it is not uncommon on dry pastures, heaths, and sunny banks. The stem is more slender than that of the preceding, and about a foot in height; but the much smaller white blossoms, with petals cleft so deeply as to make it more star-like, and less cup-like in form, at once distinguish it: the nerves of the calyx, too, are a specific character. The anthers are red. A variety of this plant is sometimes described as a distinct species, and called the Many-stalked Stitchwort, *S. scapigera*. It is distinguished by its long footstalks, and has been found on the hills north of Dunkeld, and about Loch Nevis.

4. *S. glauca* (Glaucous Marsh Stitchwort).—*Stem* angular, nearly erect, without hairs, and glaucous; *leaves* narrow, tapering, entire, and glaucous; *flowers* solitary, on long footstalks. Plant perennial. This species is readily known by its very narrow and glaucous leaves, and by the circumstance of its flowers growing singly, instead of being placed several together. Its blossoms are to be seen from May to July, and are, next to those of the Satin-flower, the largest of the genus. It, however, in its general aspect, more resembles the Lesser Stitchwort than either of the others, and like that flower,



its blossom is deeply cleft; but the moist marshy land, and not the dry open down, is the place on which we must look for it. The stem is about a foot or a foot and a half high.

5. *S. uliginósa* (Bog Stitchwort).—*Stems* spreading, angular; *leaves* smooth, broadly lanceolate, with a rigid tip; *flowers* panicled; *petals* deeply 2-cleft, shorter than the 3-nerved sepals, which are united at the base. Plant annual. Those who are wont to roam among the coarse mosses which grow on our moist lands, probably often see this little Stitchwort, for it rejoices in the soil of such spots, as well as in the sides of ditches and rivulets, and is very common. Its white flowers are so small, that one would hardly notice them among the broad leaves. They expand in June. The stems are about a foot long.

6. *S. némorum* (Wood Stitchwort).—*Lower leaves* stalked, and heart-shaped; *upper ones* egg-shaped, and sessile; *panicle of flowers* forked. Plant perennial. This rare species of *Stellaria* is found chiefly in the north of England, or in the lowlands of Scotland. It is easily distinguished from the others by the heart-shaped leaves, which are very large, and sprinkled with little raised dots, that render the surface rough. The stems are weak, and about a foot or a foot and a half long, downy at the upper part, but often smooth below. The flowers appear in May and June, and are white, deeply cleft, and twice as long as the sepals.

11. Honckenýa (Sea Purslane).

1. *H. peplóides* (Ovate-leaved Sea Purslane).—*Leaves* sessile, egg-shaped, acute, smooth, fleshy; *sepals* obtuse, with white margins; *stems* very fleshy, decumbent at the base; *calyx* without ribs. Plant perennial. This plant, which is often called Sea-side Sandwort, and placed in the genus Arenaria, is frequently very puzzling to the unpractised botanist. It is very unlike the Sandworts in general, and is so stout and succulent that it would rather remind us of the Stonecrop family. It is very peculiar, and we know of no British plant which has its leaves more distinctly decussate. Leaves are said to be decussate when they cross each other at right angles; and although, when older, this arrangement is not so distinct, yet the young shoots show very plainly the four distinct rows in which they are crowded. This Sea Purslane grows in tangled clumps on the sand, spreading its stems over the ground, the rich glossy green leaves having none of the glaucous tint of most other sea-side plants. One rarely sees its flowers; they appear in June, and are small and white, but they never expand in cloudy weather, or long after noonday. The roundish capsules contain a few seeds, which are large, in proportion to the size of the plant, and when matured are quite black. The author has occasionally found them as large as a pea. This flower is often called the Sea Pimpernel; it is confined to the sand or shingle, or the salt-marsh, never growing on inland districts. It is very common on the shores of Iceland, and is there prepared for food, by being fermented.



12. Arenária (Sandwort).

* *Leaves without stipules.*

1. *A. trinérvis* (Three-nerved Sandwort). — *Leaves* sessile, egg-shaped, acute, the lower ones stalked, 3—5 nerved, fringed; *flowers* solitary, from the forks of the stem and axils; *sepals* 3-nerved, the central nerve rough. Plant annual. This is a little plant of shady woods and moist places, having much branched downy stems, about a foot in height, and its upper leaves being without stalks. Any one little used to plants would mistake it for the common chickweed, but its white petals are not cleft like those of that flower. The blossoms are small, appearing in May and June. The Sandworts are a difficult tribe of plants to the unpractised botanist, but if this species is examined when in seed, it may be seen by a common glass, such as are used by naturalists, to possess a peculiar character, in having a little appendage to the scar of the seed. This plant delights in damp hedge-banks.

2. *A. serpyllifólia* (Thyme-leaved Sandwort).—*Leaves* broadly egg-shaped, pointed, somewhat rough, sessile; *calyx* hairy, about as long as the corolla; *stem* repeatedly forked. Plant annual. This, like many of the Sandworts, is a native of the driest places, flourishing on open sandy banks, the tops of walls, and the sea-cliffs. Mr. Johns remarks, that when growing near the shore, the stems become less branched, and the leaves somewhat larger and more decidedly fringed than in its ordinary state. It flowers from June to August, but

its white blossoms are small, and its shrubby stems and foliage rarely exceed five or six inches in height, so that the plant is too inconspicuous to attract the notice of any but the botanist.

3. *A. vérna* (Vernal Sandwort).—*Stems* numerous, panicled; *leaves* awl-shaped, 3-nerved when dry; *petals* somewhat longer than the narrow-pointed 3-nerved sepals. Plant perennial. This Sandwort is found on fragments of quartz, on the mountains in the north of England and Wales, at the Lizard Point, Cornwall, as well as about Edinburgh, and on some Scottish mountains. It is very pretty; its white flowers, which appear in May and June, being large for the size of the plant. The stems are slightly hairy, and three or four inches high. The plant grows in tufts among the grass, or on the almost bare rock.

4. *A. rubélla* (Alpine Sandwort).—*Stems* numerous; *flower-stalks* downy, terminal, and usually bearing but one flower; *leaves* slender, and awl-shaped, 3-nerved, blunt; *petals* shorter than the 3-nerved calyx. This rare plant, which is nearly allied to the last species, seems to be almost peculiar to the summits of the Breadalbane range of mountains in the Highlands of Scotland, growing amid solitudes in which the traveller might be reminded of the words of the poet:—

> "Hail, silence of the desert! I speak low
> In reverence:—Here the falcon's wing is awed,
> As o'er the deep repose, sublimely slow,
> He wheels in conscious majesty abroad;
> Spirits should make the desert their abode;
> The meekest, purest, mightiest that e'er wore
> Dust as a garment, stole from crowds unbless'd,

To sea-like forests, or the sea-beat shore,
Or utter'd on the star-sought mountain's breast
The holiest precepts e'er to earth address'd."

This lowly alpine flower has also been found on Ben Hope, in Sunderland, flowering in July and August. Sir William Hooker and Dr. Arnott remark of it:—"This is quite an alpine or arctic plant; it loves to grow with its root buried under a loose piece of rock, and late in the summer often acquires a reddish tinge."

5. *A. uliginósa* (Bog Sandwort).—*Stems* prostrate at the base, with from one to three flowers, on long slender stalks; *leaves* awl-shaped, without nerves, and somewhat blunt; *petals* about as long as the calyx. Plant perennial. This rare species, which blossoms in June, grows in tufts near Teesdale, Durham, on the banks of a stream. The whole plant is without down or hairs.

6. *A. tenuifólia* (Fine-leaved Sandwort).—*Stems* very slender, much branched and forked; *leaves* narrow, and awl-shaped, 3-nerved; *calyx* about twice as long as the petals. This is a small plant, its stems not more than five or six inches high, and scarcely thicker than a sewing-thread. It grows in sandy fields in several counties of England, bearing its minute white flowers in June and July. It has been said to occur in some parts of Scotland, but this is doubted. Like many other of its species, it is a true Sandwort, and found only on sandy lands. The French call the Sandwort *La Sablonnière*, the Germans *Das Sandkraut*, and the Dutch *Zandmuur;* while the Italians, Spanish, and Portuguese call it *Arenaria*.

7. *A. fastigiáta* (Level-topped Sandwort). — *Stems*

erect; *leaves* in tufts, awl-shaped, pointed with minute bristles; *flowers* in dense tufts; *petals* shorter than the calyx; *sepals* narrow, and pointed, white with two green ribs. Plant annual. This species occurs on rocks, on some of the Scottish mountains, and is found also on the rocks of the Pyrenees. Sir J. E. Smith remarks that its seeds are beautifully toothed like a wheel, each on a long slender stalk. It flowers in June.

8. *A. Norvégica* (Norwegian Sandwort). — *Leaves* oblong, tapering towards the base, fleshy and smooth; *sepals* egg-shaped, acute, with 3—5 obscure ribs. Plant perennial. This species was discovered in the Shetland Isles, by Mr. T. Edmonstone, Jun., in 1837. Its stems are branched, and spread over the ground, and the branchlets are from one to three-flowered. It blossoms in July and August.

9. *A. ciliáta* (Fringed Sandwort).—*Leaves* tapering towards the base, roughish, fringed with small hairs; *corolla* twice as long as the calyx; *sepals* lanceolate and acute, with 3—5 prominent ribs. Plant perennial. This small Sandwort is peculiar to the limestone mountains of Ireland. It is downy, and flowers from June to August.

* * *Leaves furnished with stipules.*

10. *A. rúbra* (Purple Sandwort).—*Leaves* linear, fleshy, pointed with a minute bristle; *stipules* chaffy; *stems* prostrate; *seeds* rough. Plant annual. This little Sandwort is very frequent on the ridges of sandy or gravelly fields, having a number of pretty little purple or pale lilac flowers in the axils of its upper leaves, from June

to September. It is much branched, and very easily distinguished from all but the next species, by the egg-shaped stipules, which consist of a pair of thin, white, chaffy scales, united at their base. It is very similar to the sea-side species, but altogether smaller, and less succulent. Many writers believe it to be the same plant, only altered by the condition of the soil on which it grows.

11. *S. marína* (Sea-side Sandwort).—*Stems* prostrate; *leaves* semi-cylindrical, without points; *stipules* white, chaffy, and cleft; *seeds* smooth, flattened, the seed-vessel usually longer than the calyx. Plant annual. Few sea-side plants are more generally to be found about our shores than this. Sometimes it hangs its branches down from a rocky crevice, giving a verdure to the cliff, though, as we look up to its clumps, we cannot perceive the small purple stars which are seated among its foliage.

Sometimes our plant grows among the timber lying in the boat-yard, near the sea, or hangs in clumps from between the stones of the harbour, on some high wall never washed by the water; but the spot on which this Sandwort attains its greatest luxuriance is the salt-marsh, where, from June to September, it may be seen amid the pale green stems of the Southernwood, and the deeper tinted rosy tufts of the Thrift, its thousands of starry flowers, as large as silver pennies, by their multitude giving a distinct hue to patches of the soil. These blossoms vary from deep purple to delicate lilac, or white. A little later in the year, the numerous seed-vessels are crushed by every footstep, as we wander over

the dreary, treeless, and almost flowerless marsh, when the wind sweeps through the sea-reeds its melancholy accompaniment to the dashing waves. The flowers of the Sea Sandwort, however, can be seen spangling the grass only in the early part of the summer's day, for, by four o'clock, each blossom is closed up from the dews which twilight brings; by nine o'clock the next morning, they will be all open again in their full loveliness, reminding us of the pretty fancy of Linnæus, who constructed a dial of such flowers as were constant in their habits of opening and closing at certain hours. Charlotte Smith has a beautiful little poem on such blossoms.

"In every copse and shelter'd dell,
Unveil'd to the observant eye,
Are faithful monitors which tell
How pass the hours and seasons by.

"The green-robed children of the spring
Will mark the period as they pass,
Mingle with leaves Time's feather'd wing,
And bind with flowers his silent glass.

"See Hieracium's various tribe
Of plumy seed and radiate flowers;
The course of time their blooms describe,
And wake or sleep appointed hours.

"Broad o'er its imbricated cup
The Goatsbeard spreads its golden rays,
But shuts its cautious petals up,
Retreating from the noontide blaze.

"Among the loose and arid sands
The humble Arenaria creeps;
Slowly the purple star expands,
But soon within its calyx sleeps.



"Thus in each flower and simple bell
That in our path untrodden lie,
Are mute remembrancers which tell
How fast the winged minutes fly.

"Time will steal on with ceaseless pace,
Yet lose we not the fleeting hours,
Who still their fairy footsteps trace,
As light they dance among the flowers."

The Purple and Sea-side Sandworts are, by some botanists, placed in a distinct genus, called *Spergularia*, from the resemblance to the Spurrey (*Spergula*). They are by these writers termed Sandwort Spurrey.

13. Cerástium (Mouse-ear Chickweed).

* *Petals not longer than the calyx.*

1. *C. viscósum* (Viscid Mouse-ear Chickweed).—*Stems* hairy, viscid; *leaves* oblong, tapering; *flowers* in panicles. Plant perennial. This is a very common plant, though one which is little noticed by any but the botanist. It would, however, if removed from the road, or field, or pasture where it grows, be missed by the singing-birds, which make a large demand on the capsules, so well stored with tiny seeds. Thomson has said, speaking of Nature,—

"All is form'd
With number, weight, and measure, all design'd
For some great end! where not alone the plant
Of stately growth; the herb of glorious hue
Or foodful substance: not the labouring steed,
The herd and flock that feed us; not the mine
That yields us store for elegance and use;
The sea that loads our tables, and conveys
The wanderer, Man, from clime to clime; with all

Those rolling spheres that from on high shed down
Their kindly influence ; not these alone,
Which strike even eyes incurious, but each moss,
Each shell, each crawling insect, holds a rank
Important in the plan of Him who framed
This scale of beings ;—holds a rank, which, lost,
Would break the chain, and leave behind a gap
Which Nature's self would rue."

This Mouse-ear Chickweed bears small white flowers throughout the summer, and its seed-vessels, as they ripen, lengthen and become curved. Its stems are spreading.

2. *C. vulgátum* (Broad-leaved Mouse-ear Chickweed). —*Stem* hairy, nearly erect, the upper part viscid ; *leaves* egg-shaped ; *petals* as long as the calyx ; *bracts* leafy. Plant annual. This is a smaller species than the last, though, in other respects, very similar to it, but it may be distinguished by its tufted flowers ; these are white and inconspicuous, the petals being sometimes altogether wanting. They may be found from March to September, and after flowering, the capsules, curving upwards as they ripen, occur in great numbers. The stem is much branched at the lower part, and grows to the height of six or eight inches. Lyell remarks of this Chickweed, that it is among the most common plants in the world, being a truly cosmopolite species. We may find it everywhere in our own land by road-sides, and in fields and pastures.

3. *C. semi-decándrum* (Five-stamened Mouse-ear Chickweed, or Little Mouse-ear Chickweed).—*Leaves* egg-shaped, or oblong ; *stem* hairy and viscid, bearing few flowers; upper half of all the *bracts* and *sepals* chaffy.

Plant annual. This is a common little herb on dry walls, or dry sandy banks and waste places, distinguished from similar species by usually having five stamens, though in a few cases these are but four in number. It blossoms very early in the year, its white flowers being almost hidden by the calyx, which is twice as long as the petals. At the same season the little Vernal Whitlow Grass often grows beside it, though this chickweed is more frequent than that plant, scarcely an old wall being without it. It remains in flower until May, withering, as Sir J. E. Smith observes, before the narrow-leaved species begins to put forth its far less conspicuous blossoms. It is a pretty little plant, very generally known by the name of Spring Mouse-ear.

4. *C. tetrándrum* (Four-cleft Mouse-ear).—*Leaves* egg-shaped, or oblong; *stem* forked, hairy, and somewhat viscid, with flowers in the forks; *calyx* rather longer than the petals. Plant annual. This species, which is in flower from May to July, may be known by its four stamens; and this is a pretty constant character, though it occasionally has five: the corolla is also 4-cleft, and it has leafy bracts. It grows on waste places, walls, and sandy grounds, chiefly, as at Yarmouth, near the sea; but it is not a common plant, and many botanists think it is merely a variety of the preceding species.

** *Petals longer than the calyx.*

5. *C. arvénse* (Field Chickweed).—*Leaves* narrow, tapering, downy; *petals* twice as long as the sepals; *stem* much branched, and bending down at the base. Plant perennial. This is by far the handsomest of our

common Mouse-ear Chickweeds, having large milk-white flowers, growing two or three together on terminal stalks. It blossoms during May and June, and it would remind us of the flower of the Greater Stitchwort, but that the petals are thicker in texture, while the foliage has a dull, greyish-green tint, instead of the rich bright green of the Stitchwort leaf, which resembles the young blade of corn in its verdure. The Field Chickweed grows in dry sandy and gravelly places, on sunny banks or downs, and is, in some parts of England, a common flower, though in others unknown. It is less frequent in Scotland.

6. *C. alpínum* (Alpine Mouse-ear Chickweed).—*Stem* ascending; *leaves* elliptical, egg-shaped, or oblong; *flowers* few; *bracts* leafy, having usually a narrow membranous margin. Plant perennial. This is a truly alpine plant, growing high up on the mountains of the Highlands, on Helvellyn, and other lofty places, and often in great abundance. It is from three to five inches high, and bears, from June to August, large handsome white blossoms, which delight the lover of alpine flowers. The whole plant is often covered with soft silky down.

7. *C. latifólium* (Broad-leaved Alpine Mouse-ear Chickweed).—*Leaves* somewhat egg-shaped; *stem* prostrate and tufted; *branches* usually single-flowered. Plant perennial. This, too, is a mountain flower, its foliage wearing a deeper green tint than that of the last species; yet, probably, it is not essentially distinct. It is chiefly distinguished by its solitary flowers, and by the yellowish down with which its leaves are covered.



8. *C. trígynum* (Stitchwort Mouse-ear Chickweed).—*Stems* bending, with an alternate hairy line; *leaves* oblong, tapering at the base; *flowers* mostly terminal, two or three together. Plant perennial. This plant, which grows on the Breadalbane mountains of Scotland, and on other mountains north of that range, has large flowers of pure white, during July and August. The much branched stems are from four to six inches high, and the foliage is downy. This plant is, by many writers, called *Stellaria cerastoides.*

9. *C. aquaticum* (Water Mouse-ear Chickweed).—*Lower leaves* stalked, upper ones sessile, heart-shaped, tapering to a point; *capsule* opening with five 2-cleft teeth. Plant perennial. This plant is the largest of the genus, and is, in its general habit, so similar to *Stellaria némorum*, that many writers think that it should at least be considered as belonging to the same genus. It differs, however, from that plant by its fewer styles, and by having hairs only on the margin of its leaves. It has white flowers during July and August, and its stem is one or two feet high. Some writers make it a distinct genus, under the name of *Maláchium*, naming it from the Greek *malakos*, soft or feeble, on account of its weak straggling habit. The French call the Mouse-ear Chick-weed *Ceraiste*, the Germans *Hornkraut*, and the Dutch *Hornbloem.*

14. Cherléria (Cyphel).

1. *C. sedóides* (Mossy Cyphel).—*Leaves* crowded, slender, and awl-shaped; *flowers* solitary; *calyx* membranous at the edge; *petals* none, or rarely present;

stamens ten; *styles* three. Plant perennial. This rare little Cyphel grows at the very summit of the Highland mountains, especially those of the Breadalbane range. It has long roots, and numerous densely tufted stems, which scarcely rise above the ground. Its yellowish green flowers are, in August, half hidden among its crowded leaves. John Henry Cherler, after whom the plant was named, assisted John Bauhin in preparing his "Historia Plantarium."

15. Buffónia.

1. *B. ánnua.*—*Stem* loosely panicled from the base; *branches* spreading, short, and firm; *capsules* scarcely so long as the calyx; *leaves* awl-shaped, spreading at the base. Annual. This plant, though still retained in the list of our English flora, is now extinct in this country. It is recorded as having been found in the time of Dillenius and Plukenet, about Boston, in Lincolnshire, and on Hounslow Heath. Many botanists call this *B. tenuifolia*, but Sir W. Hooker and Dr. Arnott remark, "Linnæus' *B. tenuifolia* is made up of several species; hence it is better to adopt the name given by De Candolle."

We have, on an earlier page, noticed the English rural names of many plants—names given by the monks or herbalists of the olden days, expressive of the real or supposed virtues of plants, of religious or other associations. The name *Buffonia* reminds us of a large class of names, many of them of more modern date, given by botanists in memory of men of eminence. A very large number of names, both generic and specific, have this

origin; and many, like the Banksias, Fuchsias, and Dahlias of our gardens, or the Cherleria, Linnæa, Sibbaldia, and others of our native plants serve to remind us of men who have done good service to the cause of science. It is not often that a botanic name bears a contemptuous allusion, and when Sauvages gave the name of *Buffonia tenuifolia* to a plant, because its slender leaves were typical of the slender attainments made by the naturalist in botanical science, he deviated from the ordinary practice of botanists. It is true that Buffon knew little of plants—true that he was a vain man; yet such of us as, like Baron Cuvier, learned from his glowing pictures of animated nature to look around us and mark the wonders and beauties of all living creatures, from the lion to the wren, feel unwilling to associate his name with one contemptuous thought. Flowers should be connected with nought that is unamiable; they are so lovely and so pure, such meet representations of all sweet and kindly sentiments, that we would fain link them but with loving and gentle memories. A few other well-known names of plants have a similar fault; and Linnæus, in his "Critica Botanica," mentions, that the genus *Dorstenia*, with its obsolete flowers, devoid of all beauty, alludes to the antiquated and uncouth book of Dorstenius; while the specific name of *Hillia parasitica* is thought by other botanists to be a just satire on the pompous pretensions of Sir John Hill, though probably Jacquin, who conferred it, might not so intend it. Linnæus, in the book referred to, draws a fanciful analogy between the names of several plants and the botanists after whom they were

designated. Thus, the genus *Bauhinia* was named after the two distinguished brothers, John and Caspar Bauhin, and its two-lobed or twin leaf seems an appropriate characteristic. *Scheuchzeria*, a grassy Alpine plant, Linnæus says, commemorates the two Scheuchzers, one of whom excelled in the knowledge of alpine productions, the other in that of grasses; while *Magnolia* and *Dillenia*, the former with its noble leaves and flowers, and the latter with its beautiful blossoms and fruit, serve to immortalise two admirable botanists. *Hernandia*, an American plant, one of the most beautiful of all trees in its foliage, but having only inconspicuous blossoms, bears the name of a botanist highly favoured by fortune, and to whom a large salary was given for investigating the natural history of the western world, but whose travels produced little result of any value. The remark made by the great Swedish botanist on the name of the plant called by Gronovius after himself, is somewhat touching. "The *Linnæa*," he says, "a depressed abject Lapland plant, long overlooked, flowering at an early age, was named after its prototype Linnæus."

Many of the names given by ancient botanists to commemorate distinguished persons, or in allusion to the uses to which the plants were applied by their fabulous deities, are yet retained. Such are *Centaurea*, from Chiron, the Centaur; *Euphorbia*, the name of the *Spurge* genus, which immortalises the physician of Juba, a Moorish prince; *Gentiana*, which tells of Gentius, King of Illyria, and has, as Gerarde would say, a "royal and princelie authoritie;" and

Achilléa, which connects our Yarrow with the renowned Greek warrior. Many excellent Greek and Latin names, which have been given at different periods, indicate, like others of our simple English ones, certain properties or striking peculiarities of the plant; such as *Amaranthus*, without decay, for an everlasting flower; *Helianthus*, a sunflower; *Lithospermum*, a stony seed, which is given to the Gromwells, from their hard nuts; *Oríganum*, the joy of the mountain, given because the Marjoram thrives on elevated spots; or *Arenaria*, which is a plant of the sand. Of this latter class are some of the best and most expressive names used by botanists. *Glaux maritima* tells us at once that we may expect to find it on the sea-shore. *Hottónia palustris*, the Water Violet, suggests in its name the marshy habitat; *Sedum rupestre* would lead us to look for the stonecrop on the rock; *Convolvulus arvensis* tells of the cultivated field; and *Poa pratensis* is the grass of the meadow.

Order XV. LINEÆ.—THE FLAX TRIBE.

Sepals 3—5, overlapping while in bud, not falling off; *petals* equal in number to the sepals, twisted before unfolding, and falling soon after expansion; *stamens* equal in number to the petals, and alternate with them, united at the base into a ring, with small teeth between them; *ovary* of about as many cells as there are sepals, and as many styles; *capsule* approaching a globular

form, tipped with the hardened base of the styles, each cell incompletely separated by a partition extending from the back inwards; *seeds* one in each imperfect cell, pendulous. This Order consists mostly of herbaceous plants, having yellow, white, or blue flowers. It is of great importance, as containing species the tenacious fibres of which are made into linen.

Linum (Flax).—*Sepals* 5; *petals* 5; *capsule* 10-valved, and 10-celled. Name from the Celtic *Lin*, thread.

2. Radiola (Flax-seed).—*Sepals* 4, connected below, 3-cleft; *petals* 4; *capsule* 8-valved, and 8-celled. Name from *radius*, a ray, either from the ray-like segments of the calyx, or the radiate direction of the branches.

1. Línum (Flax).

* *Leaves alternate.*

1. *L. perénne* (Perennial Flax).—*Leaves* very narrow, tapering to a sharp point; *sepals* inversely egg-shaped, obtuse, obscurely 5-ribbed. Plant perennial. This flax grows on chalky hills in many parts of England, as in Cambridgeshire, where one often sees its delicate blue flower in June and July, a flower so frail that the lightest breath of wind seems to make it quiver, and a butterfly's passing wing to waft it away. The stems are very slender, about a foot high, several of them arising from one root. The narrow leaves are without stalks.

2. *L. angustifólium* (Narrow-leaved Flax).—*Leaves*

very narrow, tapering to a point; *sepals* elliptical, pointed, 3-ribbed. Plant perennial. This species is more common than the last, especially on the sandy pastures in the southern and western counties of England. It much resembles the Perennial Flax, but is characterised by its more pointed sepals, and the paler blue tint of its equally fragile flower, which expands in June and July.

3. *L. usitatíssimum.—Stems* mostly growing singly from the root; *leaves* alternate, lanceolate; *sepals* egg-shaped, acute, 3-nerved, slightly fringed; *petals* edged with roundish notches. Plant annual. This species has blue flowers like the last, expanding, too, in the mid-summer months; but it is altogether much larger, and the circumstance of its root bearing a single stem instead of several, is a marked feature of difference. The flower, too, is of a deeper blue colour, and the leaves are more distant. Though quite a common plant of our fields, especially near spots where flax has been cultivated, and though found wild almost all over Europe, yet we cannot claim it as a true native to our soil. It is *Le Lin* of the French, *Der Flachs* of the German, and the *Vlasch* of the Dutch.

This species is the well-known thread, or clothing plant, so interesting in its associations, so valuable in its productions, and apparently among the earliest cultivated plants in the world. The reader of Holy Writ recals, at its mention, the period when, in the time of sorrow brought by God's anger upon the people of Egypt, the flax was smitten just as it was bolled, that is, furnished with a bole, or stem. The fine linen of Egypt, so often

referred to in Scripture, and in other ancient records, was made from it; and specimens of this fabric are yet to be seen in the linen in which the mummies are enfolded. The paintings of the grotto of El Kab yet show the whole process of the ancient manufacture with the greatest clearness; while from the fact that Rahab hid the Hebrew spies among the flax spread on her roof, we must infer that the plant was also grown in Palestine in ancient days, as it is even now.

It is thought that the preparation of flaxen thread was long almost confined to Egypt, and that the Jews procured it chiefly from thence, and used it in their fine twined work. The linen of Egypt was also used for sails; for when the Prophet describes the riches of ancient Tyre, he says, "Fine linen with broidered work from Egypt was that which thou spreadest forth to be thy sail;" and the Prophet Isaiah mentions the failure of the flax as one of the greatest calamities which should befal that country. "Moreover," he says, "they that work in fine flax, and they that weave networks, shall be confounded." Herodotus mentions that the Greeks received it in his days from Egypt. The Emperor Severus is recorded as the first Roman who ever wore a linen shirt, for woollen garments were the usual attire both of the ancient Romans and Greeks. In the time of Pliny, however, flax was generally cultivated in many parts of Europe; and that writer describes linen so fine as to equal the web woven by the spider, and at the same time so strong that it yielded a sound like the string of the lute. Still, however, the linen of Egypt had the preeminence; for this writer records having

seen a linen net from that country, of which the threads were so fine, that, although every cord of the mesh was wrought of a hundred and fifty threads twisted together, yet it could be drawn through a finger ring.

It is generally supposed that the culture of the flax plant was introduced into Britain during the first settlement of the Romans, though some authors doubt whether linen was ever manufactured here before the Conquest, flax not being mentioned as a titheable article before the year 1175. In the sixteenth century acts were passed enforcing its culture in this country, and requiring that out of every sixty acres of land one rood should be devoted to flax or hemp grounds. Flax was formerly grown much more generally in the United Kingdom than it now is. Little patches of the plant were reared by private families for their own use; and an unwholesome method of preparing it was practised, that, viz., of steeping the stalks of the plant in water, and leaving them in the sun till the green tissue was decomposed by the elements. Some streams and ponds close by dwellings were so injured by this means, that in the time of Henry VIII. and James I. acts were passed prohibiting people, under a heavy penalty, from the practice of steeping flax in any water to which cattle had access. Even the process of macerating the flax by exposure to sun and rain, must, if the plant was in any quantity, have injuriously affected the air of the neighbourhood. Many pretty domestic pictures of olden writers, and many a painting wrought by the artist, remind us of the time when flax was spun at the cottage-door into the garment of family use. A little poem, written for this work

by Mary Isabella Tomkins, whose verses so often charm the readers of "Household Words," alludes to these times :—

THE FLAX FLOWER.

"It shimmers in the sunshine,
That cup of clearest blue,
As it did love to see above
Its own reflected hue;
A fair flower and a fragile,
Each zephyr bears it down,
Yet know I none beneath the sun,
More worthy of renown.

"And ever when we see it,
What pleasant fancies steal,
Of how, around the fireside found,
We watch'd the spinning-wheel;
The spinning-wheel unwearied,
When labour else was o'er;
And saw how swift the shadows shift
It casteth on the floor!

"There wrought the cottage mother,
We list'ners gave good heed,
As loved she well with pride to tell
What stores she kept for need;
And how *her* skill the Preacher
Applauds with kindly words,
Whose distaff and whose spindle heap'd
Of old such household hoards."

Extensive flax plantations are to be found in various parts of Scotland and Ireland, and in the latter country it supplies the material for its large linen manufacture. Happily, this culture is on the increase in that land; and manufacturing capital and industry, and agricultural skill, are now being more brought into action in this

way, thus affording a large means of employment to the poor, since women, and even children, may work in the flax-grounds. Many agriculturists regret that flax is not more generally planted throughout the United Kingdom, as many parts are admirably adapted to its growth; and with the exception of the Lake district, the mountainous parts of Wales, Dartmoor, and a few places in Ireland and the borders of Scotland, the climate is well suited for the growth of this plant. Its cultivation differs very widely from that of any other crop, quality rather than weight being the desired object. Large supplies of flax have hitherto been derived from France, and Egypt, but most especially from Russia, Holland, and Belgium. The greatest attention is paid to flax at Courtray, and its produce is used for making the finest lace and cambric, the Russian flax being mostly employed in manufacturing canvas and stout cloths.

Our wild perennial flax affords almost as good a fibre as that which is more frequently cultivated. The seeds of both also contain a large quantity of oil, from which is expressed the linseed oil of commerce, and the refuse forms the substance called oil-cake, which is used as food for cattle. From the strong fibres of the flax yarn is spun, and to them we owe our coarsest and our finest linen, from the sheet and tablecloth to the cambric handkerchief, and the lint used by the surgeon. Even when these have served their household purposes, the fragments have other uses, and we may bid them go down—

> "Into the paper-mill, and from its jaws
> Stainless and smooth emerge. Happy shall be
> Its renovation, if on its fair page

Wisdom and Truth their hallow'd lineaments
Trace for posterity. So shall its end
Be better than its birth."

Both the Perennial and the Common Flax are often planted as border flowers in gardens, and many beautiful species are introduced hither from other countries. The lovely Golden Flax (*Linum trígynum*), which has blossomed in a stove in this country, has a yellow flower as large as that of the *Eschscholtzia*, and was seen by Captain Hardwicke on the sides of the mountains of India, flowering in great profusion, in December. Its provincial name is *Gul ashorifee*, "flower of the gold coin."

** *Leaves opposite.*

4. *L. cathárticum* (Cathartic Flax).—*Leaves* oblong, broader at the base; *sepals* pointed. Plant annual. This pretty little flax is very different from the other species in regard to size, but the little vase-like blossom is formed like theirs. It is of pure white, and so small, that an emmet would hardly find shelter within its cup. The whole plant has the slender elegance of the Flax tribe. It flowers from June to August, drooping gracefully before expansion. This is a very common species on meadows, chalky hills, and cliffs, where it grows beside the Eyebright, the Rock-rose, and Wild Thyme, acquiring, from its love of hill sides, the country name of Mill Mountain. It has a long-established reputation in villages as a cure for rheumatism. It rarely grows to the height of six inches, and is as common on the chalky soils of France as on our own.

2. Radíola (Flax-seed).

1. *R Milleyrána* (Thyme-leaved Flax-seed).—*Leaves* distant, egg-shaped, entire, smooth; *flowers* solitary, on short stalks. Plant annual. This is not a very common plant, though occurring in many parts of our island, and is one of the smallest of our wild flowers. Sir William Hooker and Dr. Arnott remark of the leaves, that when under a high power of the microscope, they are seen to be dotted. The flowers are white, growing among the leaves, but they would hardly be observed were they not so numerous. They expand in July and August. Moist boggy soils, and lands in which gravel prevails, are the places on which we must look for this Flax-seed, which, from its small size, is doubtless often passed by without being seen.

Order XVI. MALVACEÆ.—THE MALLOW TRIBE.

Sepals 5, more or less united at the base, valvate in bud, and often enclosed in an outer calyx; *petals* 5, twisted while in bud; *stamens* numerous, and united by their filaments into a tube; *ovary* formed of several carpels united in a radiate manner; *styles* of the same number as the carpels, either distinct or united; *capsules* 1-seeded, placed in a whorl round the style; *leaves* alternate, with stipules. This Order contains a large

number of shrubs and herbaceous plants; most of them are clothed with down, and the kidney-shaped 1-celled anthers are found in all. All the species abound in a nutritious mucilage, and no plant among them possesses any unwholesome properties. This mucilage is extracted from many by boiling, and is valuable as a medicine; and several of the mallow tribe are useful as food. The young heads of the *Hibiscus esculentus*, the *Ochro* of eastern countries, are much valued as an ingredient in soups; and the *Abútilon esculentum* serves the same purpose in Brazil. Several of the *Hibiscus* tribe afford excellent medicines; and the *Hibiscus Rosa Sinensis* is the Shoe-flower of the East Indies, its juice being used instead of blacking. In China it is also employed for dyeing the hair black, while the seeds of several other species are used as coffee; but the most valuable plant of the tribe is the *Gossypium*, the Cotton-bearer, which affords the cotton of our manufactures. This substance is the downy investiture of the seeds with which the pods are filled, and which is picked off for use. The seeds, after being stripped of the down, are bruised for the oil which they contain, or furnish a wholesome and nutritious article of food.

1. Málva (Mallow).—*Styles* numerous; *outer calyx* 3-leaved; *inner* 5-cleft. Name from the Greek *malaché*, soft, from their emollient mucilage.

2. Lavatéra (Tree Mallow).—*Styles* numerous; *outer calyx* 3-lobed; *inner* 5-cleft. Named in honour of the two Lavaters, friends of Tournefort.

3. Althæa (Marsh Mallow).—*Styles* numerous; *outer*



calyx 6—9 cleft. Name from the Greek *áltho*, to cure, from its healing nature.

1. Málva (Mallow).

1. *M. sylvéstris* (Common Mallow).—*Stem* ascending, or erect; *root-leaves* kidney-shaped, with 7 acute lobes; *fruit-stalks* erect; *fruit* not downy, wrinkled. Plant perennial.

Every one knows our common Mallow, Marsh or Mash-mallow, as country people frequently and erroneously term it. A very handsome flower it is, when, in the summer months, from June to August, its lilac petals are lying fully open, and giving a bright tint to many a waste piece of ground or field border. This species is not frequent in Scotland, but in England it is universally so; and we have only to walk out of our metropolis towards any of its suburbs, and we are sure to find its large handsome rounded leaves, when fresh and young being bright green, but soon becoming, as the plant grows older, ragged and grey. Under the rock, by the road side, or in the nook where the long bramble-stems are twining, or the large dock-leaves are clustering, many a bright clump of mallow is to be found.

> "To me the wilderness of thorns and brambles,
> Beneath whose weeds the muddy runnel scrambles;
> The bald burnt moor, the marshy sedgy shallows
> Where docks, bulrushes, water-flags, and mallows
> Choke the rank waste, alike can yield delight;
> A blade of silver hair-grass nodding slowly
> In the soft wind; the thistle's purple crown,
> The ferns, the rushes tall, and mosses lowly

A thorn, a weed, an insect, or a stone,
Can thrill me with sensations exquisite—
For all are exquisite, and every part
Points to the Mighty Hand that fashion'd it."

It is not alone in its beauty of tint and in its use to man and animal, that the mallow offers indications of the great Creator's skill. The minute grains of white pollen, or powder, which stud its central column, coming off on our fingers as we touch it, are exquisitely beautiful when examined by the aid of a microscope. Small as they are, their structure is wonderfully organized, each minute particle being, as in several other plants of the Order, a minute globe surrounded with prickles; or, as Linnæus described it, each grain resembles the wheel of a watch, the prickles giving to its globular form this toothed appearance. This pollen is in an earlier stage contained in the anther, which, as we have stated, is kidney-shaped, and which is like a little box filled with these grains of pollen. The anther of plants is at all times a wondrous object; sometimes it consists of several cells, but most frequently it is formed of two, and sometimes, as in the mallow, of but one. When the pollen is ripe, the anthers burst, and discharge their contents. The granules of pollen are often oblong, but some, like those of the Portugal Dill, (*Anéthum ségetum*,) are cylindrical, and in some plants, as the Virginian Spider-wort, they are curved; others are square, or oval, and in the Evening Primrose the shape is triangular, with the angles so much dilated as to give the sides a convex form; some, like those of the mallow, are studded with prickles, and most are furrowed. This pollen

is full of a matter exuded at its bursting; and we subjoin a description given by Professor Lindley of one of the curious contrivances for its emission, affording one of those instances of Divine skill which become more apparent the more we examine the works of God in Nature. Referring to the pollen of the Passion-flower this botanist tells us that each spherical grain has on its surface three equidistant circles, which indicate the lines at which it opens; at the proper time those parts of the coat of the grain contained within the circle separate from the rest, like little lids, and allow the contents of the pollen to escape.

The colour of the pollen of the mallow is white slightly tinged with lilac, and it varies in different plants to almost every colour except green. It is more often yellow than of any other tint; but in the tall willow herb called French Willow, the pollen is blue; in the Mullein it is red, and in the Tulip black. So wonderfully regular, however, are all the characters of natural objects—even the most minute—that a skilful botanist can exactly discover the class of a plant by examining its pollen with a microscope. The American Journal of Science for June, 1842, gives a very interesting account of some showers of pollen, one of which fell at Troy, New York, and another in the harbour of Picton. In the latter case, so large a quantity of pollen was carried through the air, on a serene night in June, that a portion alighting on a vessel in the harbour had to be collected and thrown over by the bucket-full in the morning. A small quantity of the powder was, in each of these cases, preserved, and sent to Professor J. W. Bailey, for micro-

scopic examination. This gentleman ascertained that the powder which fell at Picton was wholly composed of the pollen of a species of pine, and that the substance collected from Troy was formed of that of various trees, though he was unable to state with certainty from what trees it had proceeded. Drawings of the three forms of pollen met with in this powder from Troy were furnished by Professor Bailey; and Mr. Hassall, after examination, considered that two of them have to be referred to some endogenous plants, one, most probably, to a species of grass, the other, perhaps, to a plant of the water-lily genus; and that the third form was unquestionably the pollen of an exogenous plant, not unlikely to be that of the hazel. The great quantity of granular substances analogous to seeds which exist in the club-mosses, led to the suggestion that this pollen might have arisen from these plants; but Professor Bailey considered this as unlikely, because the club-mosses do not produce these grains till a later season; and Mr. Hassall arrived at the same conclusion, because the figures of the pollen did not agree in form with the sporules or seeds of the club-mosses.

The seeds of the mallow are often by country children, both in England and France, called cheeses; and many of us besides Clare can recal

> "The sitting down, when school was o'er,
> Upon the threshold of the door,
> Picking from mallows sport to please,
> The crumpled seed we call'd a cheese."

The leaves of the mallow are used as an application to wounds, and are often boiled and placed, with excellent

effect, over painful swellings; and an infusion or decoction of the leaves is a very valuable and simple medicine in cases where mucilaginous drinks are needed. Did we prize them as the old herbalists did, we might exclaim with the poet,—

"Alas! when mallows in the garden die;"

for wondrous, indeed, were the virtues imputed to them in the olden time. The leaves boiled in wine and water are said, by one old writer, to be "very convenient in agues;" and the decoction of the seed in milk was said, with more reason, "marvellously to help diseases of the chest;" while the leaves laid upon the eye were to remove all its maladies; and, rubbed upon a limb stung by a wasp, were to take away all pain. The feet were to be bathed with a decoction of the leaves, roots, and flowers, as a certain cure for a cold; and the falling off of the hair was to be stayed by a timely application of a similar preparation. We are amused at finding how confidently both herbalists and poets of those days trusted in the efficacy of plants. They must have had hopeful natures, the men of those times, to have lost sight of the repeated disappointments which must have followed the application of some of their specifics. Michael Drayton, in the Polyolbion, gives a long list of plants prized in those times for healing virtues, and does not omit the truly useful mallow:—

"Here wholesome plantaine, that the paine
Of eyes and ears appeases;
Here cooling sorrel, that againe
We use in hot diseases;

The med'cinable mallow here,
Assuaging sudden tumours;
The jagged polypodium there,
To purge out evil humours."

But all the praises of the mallow are outdone by those of Pliny, who gravely assures us,—"Whosoever shall take a spoonful of any of the mallows, shall that day be free from all the diseases that may come unto him;" and adds, that it is a special good against the falling sickness. No wonder that nervous disorders were less common in those days, when men and women went forth forearmed, as they believed, against the attacks of the most terrible epidemics, if they used only the aid of the plant which grew by the wayside; and when, however they might feel for the sufferings of others, they believed themselves to be invulnerable to so many ills.

Dr. Bromfield found a variety of the common mallow in the Isle of Wight, with flowers of a sky-blue colour. Another variety has prostrate stems, and a third bears small blossoms. The French call the mallow *La Mauve;* it is *Die Malve* of the Germans, the *Malume* of the Dutch, and the *Malva* of the Spaniards and Italians.

2. *M. rotundifólia* (Dwarf Mallow).—*Stem* prostrate; *leaves* roundish, heart-shaped, with five shallow lobes; *fruit-stalks* bent down; *fruit* downy. Plant annual. This species, which is altogether smaller than the last, is not so frequent, though in some parts of England it is not uncommon. It is rare in Scotland. It is easily distinguished, not only by its prostrate stems, but by its much smaller and lighter-tinted flowers, which are of a

pale greyish lilac. It blossoms from June to September, and its stems are from four to twelve inches long.

Both this and the Common Mallow are valued as food in Eastern countries, and both extend from Europe to the north of India. The Dwarf Mallow is cultivated in gardens at Rosetta, where it is called Hobere ; and it is one of the culinary vegetables in most common use there, and daily eaten with meat. Many writers have supposed that one or other of these species was referred to by Job, when he says of those who in his distress assumed a superiority over him, that they formerly "cut up the mallows by the bushes for their meat." The mallow of the patriarch has been an object of much learned discussion, the Hebrew word *malluach* having a resemblance to the Greek *malakhi*, which signifies mallow, and also to *maluch*, which is said to be the Syriac name of a species of Atriplex. It is quite likely that both these plants may have been eaten in Arabia, as they are still in other parts of the East. Russell mentions that the fields about Aleppo are planted with bugloss, mallow, and asparagus, which the people use as pot-herbs. A plant commonly called Jew's-mallow may, however, be the one intended. This is the *Córchorus olitorius* of the botanist, and is a species of mallow, of glutinous substance, and with roughish pods. It is commonly used in Eastern dishes, and is called by the Arabs Mallow Keali. The learned Bochart, and some other writers, think that the Hebrew word implies a saltish plant, and refer the mallow of Job to the tall shrubby Orache of our salt shores (*Atriplex Halimus*);

while other writers have believed that some of the Saltworts (*Solsolæ*) are intended. These plants are all articles of Eastern diet, and common on the dry saline soils of the deserts which extend from the south of Europe to the north of India.

3. *M. moschàta* (Musk Mallow).—*Stem* erect; *root-leaves* kidney-shaped, deeply 5- or 7-lobed, and cut; *stem-leaves* deeply 5-lobed, and variously cut into numerous narrow segments; *outer calyx leaves* very narrow; *fruit* hairy. Plant perennial. This is the handsomest of our native species of mallow, its large, light rose-coloured flowers standing, in July and August, on a stem two or three feet high, and growing several together, from among the terminal leaves. Many of the pastures and road-sides, especially such as have a gravelly soil, are decked with this pretty and fragrant flower, but there are rural districts in which it is quite unknown. The foliage is of a delicate light green, and has, when the weather is warm, a sweet odour of musk, which, during the day-time, is perceptible only on handling the plant, but which becomes much more powerful in the evening. It sometimes bears white flowers, and it is often planted in gardens.

2. Lavatéra (Tree Mallow).

1. *L. arbórea* (Sea Tree-Mallow).—*Stem* arborescent; *leaves* downy, plaited, with about seven angles. Plant biennial. The Sea Buckthorn, the Sand Willow, and our Tree Mallow, are almost the only shrubby plants



of our sea-shores, and the latter is by far the most showy of them all. It is well known to most lovers of flowers, being often planted in gardens and shrubberies near the sea, but it is not common as a wild plant. It occurs in several places on rocks in Cornwall, at Teignmouth and other parts of Devon, on the Isle of Wight, on the island of Steep Holmes, on the West coast of Anglesey, and on several parts of the Scotch and Irish shores, as well as in the isles of the Frith of Forth. It grows sometimes wild on the walls of harbours, but is not found inland, except when cultivated. In gardens the Tree Mallow grows well, and attains a large size. A young plant sometimes survives one or more winters, if it has not flowered, but when once it has blossomed it perishes. Its large, purplish, rose-coloured blossoms, deepening in tint towards the centre, are very ornamental to the sea-rocks, from July to September. The stem attains, in favourable circumstances, eight or ten feet in height. The Tree Mallow is *La Lavatère* of the French, *Der Malvenbaum* of the Germans, and the *Malvaiscao* of the Portuguese.

Another species of Tree Mallow, the *Lavatera Olbia*, is a much more beautiful shrub. It was named *Olbia* by Linnæus, that being the ancient name of the town of Hyères, which is about twelve miles from Toulon. The plant grows in abundance in the neighbourhood of this celebrated place, which was the Hieros of the Greeks, but which in later days received the name of Arcæ from the Romans, who enriched the town with many monuments, all of which have now disappeared. Mr.

Mumby, in his sketch of the botany of this neighbourhood, remarks, "We gathered also the *Lavatera Olbia*, which was pushing its branches to the height of ten or twelve feet, loaded with thick clusters of blue flowers. This plant, together with the shrubby *Atriplex Halimus*, were woven with the prickly branches of *Smilax áspera*, and form an impenetrable fence to the few patches of ground that are enclosed. These two plants are also the most interesting to an English botanist, who in his own country has been accustomed to see species of this last genus scarcely able to raise their heads from the ground; and he who has been fortunate enough to meet with the *Lavatera arborea*, which adorns some of our mountainous provinces, will be capable of judging of the magnificence of a tree of the same genus."

3. Althæa (Marsh Mallow).

1. *A. officinális* (Common Marsh Mallow).—*Leaves* 3 to 5-lobed, soft and downy on both sides, heart-shaped, or egg-shaped, toothed, entire; *flower-stalks* axillary, many-flowered, and shorter than the leaves. Plant perennial. This, too, is a plant of the sea-shore, and if we except the Michaelmas Daisy, it is the most showy flower of the salt-marsh. It may be seen from afar as we wander over the desolate green flats, its stems often attaining the height of three feet, and looking at a distance like a small shrub, decked, during August and September, with large pale rose-coloured blossoms. These grow three or four together from the axils of the grey-

green leaves. We know of no other British leaf possessing the downy surface of that of the Marsh Mallow, which is to the touch so like a piece of soft thick velvet, that one can hardly imagine it to be a leaf. This plant is very rare in Scotland, and, perhaps, not truly indigenous, though found in the Solway Frith, and at Arran and Campsie. In many parts of England it is common in the salt marshes, both of the sea and the salt rivers. In some country places it is called Wymote; the French term it *La Guimauve*, and *Mauve-gui*, that is, Clammy Mallow. In Germany this plant is termed *Der Eibisch*, and in Holland *Der Heemst;* and it is the *Altea* of the Spaniards. Old writers called it *Malva visca*, on account of the quantity of mucilage which it contains, and which mingles with a saccharine principle. It exists in every part of the plant, but especially in the root, which is perfectly white when peeled and dried. Mallow roots of very fine quality have been produced in some districts of France, and these are sent to the large towns, where their thickened juices are mingled with sugar, and made into lozenges, which the French call *Pâtes de guimauve*. The mucilage is an old remedy for coughs, and was prescribed for pulmonary affections by Hippocrates; while, among our old herbalists, the Marsh Mallow was almost unrivalled for its remedial properties, every part, from the seed to the root, being prepared in various ways so as to offer a cure for almost every malady to which the human frame is liable; and, assuredly, it was not only as safe, but as salutary a medicine as any contained in their long list. A decoction of Marsh

Mallow is still taken with advantage as a demulcent, and the boiled leaves form a valuable application in cases of abrasion.

The Marsh Mallow is a native of every country of Europe, and we seldom look upon its large grey leaves without recalling to mind one of the uses to which the plant was applied in darker days. In times when men accused of crime had to give a supposed proof of their innocence or guilt by passing through some ordeal, persons of weak health or delicate frame, especially monks and ecclesiastics, were exempted from the usual mode of single combat, and were required to test their innocence by holding red-hot iron in the hand. As these trials were made in the church, and during the performauce of the mass, and as inspection was made by the clergy alone, the suspected person, if he had friends about him, was easily shielded by covering his hands with a thick coating of some substance which would enable him to resist the action of heat. A kind of paste used for this purpose was described in the thirteenth century, by Albertus Magnus, a Dominican monk. The sap of the Marsh Mallow, the slimy seeds of a kind of Flea-bane (which were until recently used in Germany by hat-makers and silk-mercers), together with the white of an egg, were combined, to make the paste adhere, and the hands were then as safe as if covered with a pair of gloves. Beckmann, remarking on this, says—"The use of this juggling trick is very old, and may be traced back to a Pagan origin. In the Antigone of Sophocles, the guards placed over the body

of Polynices, which had been carried away contrary to the orders of Creon, offered, in order to prove their innocence, to submit to any trial. 'We will,' said they, 'take up red-hot iron in our hands, or walk through fire.'"

The ancients planted some kinds of mallow about the tombs of their departed friends, and made large use of them as vegetable food, but the particular species which they used cannot be ascertained. It is not likely that the Marsh Mallow would be planted in a cemetery, most probably, therefore, some of the many species common in our gardens, several of which grew wild in the South of Europe, are the kinds used by the Greeks and Romans. The beautiful hollyhocks of our flower-beds—*la rose d'outre mer*, as the old French writers termed it—are all varieties of the *Althæa rosea*, which is a native of China. Its leaves are said to yield a colouring matter little inferior to indigo. A large number of other species of *Althæa* are common, too, as border flowers.

2. *A. hirsúta* (Hispid Marsh Mallow).—*Leaves* cordate, rough with hairs, lobed, and crenate; *stem* hairy; *flower-stalks* single-flowered, longer than the leaves. Plant annual. This *Althæa* may be easily distinguished from the other species by its solitary flowers, and its bristly stem and rough leaves. It is very rare, growing only between Cobham and Cuxton, in Kent, but occurring there in considerable abundance. It is a doubtful native; but it is a remarkable circumstance that this, its only British locality, was recorded more than half

a century since, and that the plant still grows there now, and has never been found in any other part of the kingdom. Two other species are sometimes described. *M. pusílla* and *M. verticillata;* a single plant of the former was found at Hythe, in Kent, by Hudson. The latter is not a British plant, though occurring near Llanelly, in Wales.

END OF VOL. I.

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